

Sequence Listing

<110> Ashkenazi, Avi
 Baker Kevin P.
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 Gerritsen, Mary E.
 Goddard, Audrey
 Godowski, Paul J.
 Grimaldi, J. Christopher
 Gurney, Austin L.
 Hillan, Kenneth J
 Kljavin, Ivar J.
 Kuo, Sophia S.
 Napier, Mary A.
 Pan, James;
 Paoni, Nicholas F.
 Roy, Margaret Ann
 Shelton, David L.
 Stewart, Timothy A.
 Tumas, Daniel
 Williams, P. Mickey
 Wood, William I.

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acactgaaga aaaccttngt ccttgcccc agntttgtgn tgcggatnat 100

cgctctcacc gccagcctng tggctctacc ctacctgggg gtgcacggtg 150

agac 154

<210> 11

<211> 24

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<213> Artificial Sequence

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<220>
<223> Synthetic oligonucleotide probe

<400> 11
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<210> 12
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<223> Synthetic oligonucleotide probe

<400> 12
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<210> 13
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<220>
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<400> 13
tcattctcttc cctctccc 18

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<220>
<223> Synthetic oligonucleotide probe

<400> 14
ccttcgcgcca cggagttc 18

<210> 15
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<220>
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<400> 15
ggcaaagtcc actccgatga tgtc 24

<210> 16
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<212> DNA
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<220>
<223> Synthetic oligonucleotide probe

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<400> 16
gcctgctgtg gtcacaggtc tccg 24

<210> 17

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

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<400> 17

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<210> 18

<211> 1901

<212> DNA

<213> Homo sapiens

<400> 18

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ctctgcccc tgcctcctgt gcagctgtg ccccgccagc cgcaactcca 150
ccgtgagccg cctcatcttc acgttcttcc tcttcctggg ggtgctggtg 200
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 tggtcacgtc ccccagggga ccctgcccc ttcttgact tcgtgcctta 1850
 ctgagtctct aagacttttt ctaataaaca agccagtgcg tgtaaaaaaa 1900
 a 1901

<210> 19
 <211> 457
 <212> PRT
 <213> Homo sapiens

<400> 19
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 Cys Leu Cys Gly Ser Ala Pro Cys Ile Leu Cys Ser Cys Cys Pro
 20 25 30
 Ala Ser Arg Asn Ser Thr Val Ser Arg Leu Ile Phe Thr Phe Phe
 35 40 45
 Leu Phe Leu Gly Val Leu Val Ser Ile Ile Met Leu Ser Pro Gly
 50 55 60

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 350 | | 355 | | 360 |
| Leu Asp Ala Thr | Gln Gln Gln Gln Gln | Gln Val Ala Ala Cys | Glu | | |
| | 365 | | 370 | | 375 |
| Gly Arg Ala Phe | Asp Asn Glu Gln Asp | Gly Val Thr Tyr Ser | Tyr | | |
| | 380 | | 385 | | 390 |
| Ser Phe Phe His | Phe Cys Leu Val Leu | Ala Ser Leu His Val | Met | | |
| | 395 | | 400 | | 405 |
| Met Thr Leu Thr | Asn Trp Tyr Lys Pro | Gly Glu Thr Arg Lys | Met | | |
| | 410 | | 415 | | 420 |
| Ile Ser Thr Trp | Thr Ala Val Trp Val | Lys Ile Cys Ala Ser | Trp | | |
| | 425 | | 430 | | 435 |
| Ala Gly Leu Leu | Leu Tyr Leu Trp Thr | Leu Val Ala Pro Leu | Leu | | |
| | 440 | | 445 | | 450 |
| Leu Arg Asn Arg | Asp Phe Ser | | | | |
| | 455 | | | | |

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<220>
 <223> Synthetic oligonucleotide probe

<400> 20
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<210> 21
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 21
 tcatccagct ggtgctgctc 20

<210> 22
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<220>
 <223> Synthetic oligonucleotide probe

<400> 22
 cttcttcac ttctgctgg 20

<210> 23
 <211> 18

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 23
cctgggcaaa aatgcaac 18

<210> 24
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 24
caggaatgta gaaggcaccc acgg 24

<210> 25
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 25
tggcacagat cttcacccac acgg 24

<210> 26
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 26
tgtccatcat tatgctgagc ccgggcgtgg agagtcagct ctacaagctg 50

<210> 27
<211> 1351
<212> DNA
<213> Homo sapiens

<400> 27
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cgcggcacgt ccgcgaggac ttgaagtcct gagcgctcaa gtttgtccgt 150
aggtcgagag aaggccatgg aggtgccgcc accggcaccg cggagctttc 200
tctgtagagc attgtgccta tttccccgag tctttgctgc cgaagctgtg 250

actgccgatt cggaagtcct tgaggagcgt cagaagcggc ttccctacgt 300
cccagagccc tattaccogg aatctggatg ggaccgcctc cgggagctgt 350
ttggcaaaga tgaacagcag agaatttcaa aggaccttgc taatatctgt 400
aagacggcag ctacagcagg catcattggc tgggtgtatg ggggaatacc 450
agctttttatt catgctaaac aacaatacat tgagcagagc caggcagaaa 500
tttatcataa ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca 550
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tgtgactata ttcaacacag tgaacactag tctgaatgta taccgaaata 650
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cctccctgag aaaattgaaa gtagtttacg ggaagatgaa cctgagaatg 950
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tcttttggtca gcctgctgac aaatttaagt gctggtacct gtggtggcag 1150
tggtttgctc ttgtcttttt cttttctttt taactaagaa tggggctggt 1200
gtactctcac tttacttata cttaaattta aatacatact tatgtttgta 1250
ttaatctata aatatatgca tacatggata tatccaccca cctagatttt 1300
aagcagtaaa taaaacattt cgcaaaagat taaagttgaa ttttacagtt 1350
t 1351

<210> 28
<211> 285
<212> PRT
<213> Homo sapiens

<400> 28
Met Glu Val Pro Pro Ala Pro Arg Ser Phe Leu Cys Arg Ala
1 5 10 15
Leu Cys Leu Phe Pro Arg Val Phe Ala Ala Glu Ala Val Thr Ala
20 25 30

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Asp | Ser | Glu | Val | Leu | Glu | Glu | Arg | Gln | Lys | Arg | Leu | Pro | Tyr | Val | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Pro | Glu | Pro | Tyr | Tyr | Pro | Glu | Ser | Gly | Trp | Asp | Arg | Leu | Arg | Glu | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Leu | Phe | Gly | Lys | Asp | Glu | Gln | Gln | Arg | Ile | Ser | Lys | Asp | Leu | Ala | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Asn | Ile | Cys | Lys | Thr | Ala | Ala | Thr | Ala | Gly | Ile | Ile | Gly | Trp | Val | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Tyr | Gly | Gly | Ile | Pro | Ala | Phe | Ile | His | Ala | Lys | Gln | Gln | Tyr | Ile | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Glu | Gln | Ser | Gln | Ala | Glu | Ile | Tyr | His | Asn | Arg | Phe | Asp | Ala | Val | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Gln | Ser | Ala | His | Arg | Ala | Ala | Thr | Arg | Gly | Phe | Ile | Arg | Tyr | Gly | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Trp | Arg | Trp | Gly | Trp | Arg | Thr | Ala | Val | Phe | Val | Thr | Ile | Phe | Asn | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Thr | Val | Asn | Thr | Ser | Leu | Asn | Val | Tyr | Arg | Asn | Lys | Asp | Ala | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ser | His | Phe | Val | Ile | Ala | Gly | Ala | Val | Thr | Gly | Ser | Leu | Phe | Arg | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ile | Asn | Val | Gly | Leu | Arg | Gly | Leu | Val | Ala | Gly | Gly | Ile | Ile | Gly | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Leu | Leu | Gly | Thr | Pro | Val | Gly | Gly | Leu | Leu | Met | Ala | Phe | Gln | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Tyr | Ala | Gly | Glu | Thr | Val | Gln | Glu | Arg | Lys | Gln | Lys | Asp | Arg | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Lys | Ala | Leu | His | Glu | Leu | Lys | Leu | Glu | Glu | Trp | Lys | Gly | Arg | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gln | Val | Thr | Glu | His | Leu | Pro | Glu | Lys | Ile | Glu | Ser | Ser | Leu | Arg | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Glu | Asp | Glu | Pro | Glu | Asn | Asp | Ala | Lys | Lys | Ile | Glu | Ala | Leu | Leu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Asn | Leu | Pro | Arg | Asn | Pro | Ser | Val | Ile | Asp | Lys | Gln | Asp | Lys | Asp | |
| | | | | 275 | | | | | 280 | | | | | 285 | |

<210> 29

<211> 324

<212> DNA

<213> Homo sapiens

<400> 29

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<400> 32
cttgaggagc gtcagaagcg 20

<210> 33
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 33
ataacgaatg aagcctcgtg 20

<210> 34
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 34
gctaataatct gtaagacggc agctacagca ggcatcattg 40

<210> 35
<211> 1819
<212> DNA
<213> Homo sapiens

<400> 35
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ccaccacgt ctgcgttgcg gcccgcctg ggccaggccc caaaggcaag 100
gacaaagcag ctgtcaggga acctccgccg gagtccaatt tacgtgcagc 150
tgccggcaac cacaggttcc aagatggttt gcgggggctt cgcgtgttcc 200
aagaactgcc tgtgcgcocct caacctgctt tacaccttgg ttagtctgct 250
gctaattgga attgctgcgt ggggcattgg cttcgggctg atttccagtc 300
tccgagtggc cggcgtgggc attgcagtgg gcattcttct gttcctgatt 350
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tttttatatg attattctgt tacttgtatt tattgttcag ttttctgtat 450
cttgcgcttg tttagccctg aaccaggagc aacagggtca gcttctggag 500
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gaatatgctg gagagggttt gagatttggt ggtggcattg gcctgttctt 700

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 taagctccat ttgccagttt aaggaaggaa acactatctg gaaaagtacc 900
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 aagtatatct atatgatctt gatattgttt tataataatt tgaagtctaa 1550
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 ttctcagtat tgtaacagca acttgtcaaa cctaagcata tttgaatatg 1700
 atctcccata atttgaaatt gaaatcgtat tgtgtggctc tgtatattct 1750
 gttaaaaaat taaaggacag aaacctttct ttgtgtatgc atgtttgaat 1800
 taaaagaaag taatggaag 1819

<210> 36
 <211> 204
 <212> PRT
 <213> Homo sapiens

<400> 36
 Met Val Cys Gly Gly Phe Ala Cys Ser Lys Asn Cys Leu Cys Ala
 1 5 10 15
 Leu Asn Leu Leu Tyr Thr Leu Val Ser Leu Leu Leu Ile Gly Ile
 20 25 30

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Ala | Trp | Gly | Ile | Gly | Phe | Gly | Leu | Ile | Ser | Ser | Leu | Arg | Val | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Val | Gly | Val | Val | Ile | Ala | Val | Gly | Ile | Phe | Leu | Phe | Leu | Ile | Ala | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Leu | Val | Gly | Leu | Ile | Gly | Ala | Val | Lys | His | His | Gln | Val | Leu | Leu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Phe | Phe | Tyr | Met | Ile | Ile | Leu | Leu | Leu | Val | Phe | Ile | Val | Gln | Phe | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ser | Val | Ser | Cys | Ala | Cys | Leu | Ala | Leu | Asn | Gln | Glu | Gln | Gln | Gly | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gln | Leu | Leu | Glu | Val | Gly | Trp | Asn | Asn | Thr | Ala | Ser | Ala | Arg | Asn | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asp | Ile | Gln | Arg | Asn | Leu | Asn | Cys | Cys | Gly | Phe | Arg | Ser | Val | Asn | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Pro | Asn | Asp | Thr | Cys | Leu | Ala | Ser | Cys | Val | Lys | Ser | Asp | His | Ser | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Cys | Ser | Pro | Cys | Ala | Pro | Ile | Ile | Gly | Glu | Tyr | Ala | Gly | Glu | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Arg | Phe | Val | Gly | Gly | Ile | Gly | Leu | Phe | Phe | Ser | Phe | Thr | Glu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ile | Leu | Gly | Val | Trp | Leu | Thr | Tyr | Arg | Tyr | Arg | Asn | Gln | Lys | Asp | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Pro | Arg | Ala | Asn | Pro | Ser | Ala | Phe | Leu | | | | | | | |
| | | | | 200 | | | | | | | | | | | |

<210> 37

<211> 390

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 20, 35, 61, 83, 106, 130, 133, 187, 232, 260, 336

<223> unknown base

<400> 37

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tattctgtaa nttgtattta ttgttcagtt ttntgtatct tgcgcttggt 100

tagccontgaa ccaggagcaa cagggtcagn ttntggaggt tggttggaac 150

aatacggcaa gtgctcgaaa tgacatccag agaaatntaa actgctgtgg 200

gttccgaagt gttaacccaa atgacacctg tntggctagc tgtgttaaaa 250

gtgaccactn gtgctcgcca tgtgctccaa tcataggaga atatgctgga 300

gaggttttga gatttggttg tggcattggc ctgttnttca gttttacaga 350
gatcctgggt gtttggtga cctacagata caggaaccag 390

<210> 38
<211> 566
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 27
<223> unknown base

<400> 38
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ggtaaaaagt gttagtataa aaatgataat ttacttgtag tcttttatga 100
ttacaccaat gtattctaga atagttagt cttaggaaat tgtggtttaa 150
tttttgactt ttacaggtaa gtgcaaagga gaagtgggtt catgaaatgt 200
tctaattgtat aataacattt accttcagcc tcccatcaga atggaacgag 250
ttttgagtaa tccaggaagt atatctatat gatcttgata ttgttttata 300
taatttgaag tctaaaagac tgcattttta aacaagttag tattaatgcg 350
ttggcccacg tagcaaaaag atatttgatt atcttaaaaa ttgttaaata 400
ccgttttcat gaaagttctc agtattgtaa cagcaacttg tcaaacctaa 450
gcataattga atatgatctc ccataatttg aaattgaaat cgtattgtgt 500
ggaggaaatg gcaatcttat gtgtgctgaa ggacacagta agagcaccaa 550
gttgtgcccc acttgc 566

<210> 39
<211> 264
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 84-85, 206
<223> unknown base

<400> 39
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cttgtttagc ccctgaaacc aggagcaaca gggncagct tcttgagggt 100
tggttggcaa caatcacggc caagtgactc cgcaaatgac atcccagaga 150
aatcctaaac tgctgtgggt tccgaagtgt taacccaaat gacacctgtc 200

tggtctngctg tgttaaaagt gaccactcgt gctcgccatg tgcaccaatc 250

ataggagaat atgc 264

<210> 40

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 40

acccaogtct gcgttgctgc c 21

<210> 41

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 41

gagaatatgc tggagagg 18

<210> 42

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 42

aggaatgcac taggattcgc gcgg 24

<210> 43

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 43

ggcccaaaag gcaaggacaa agcagctgtc agggaaacctc cgccg 45

<210> 44

<211> 2061

<212> DNA

<213> Homo sapiens

<400> 44

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<210> 45

<211> 359

<212> PRT

<213> Homo sapiens

<400> 45

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| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Val | Leu | Trp | Val | Ala | Gln | Met | Leu | Leu | Ala | Ala | Ser | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Glu | Thr | Leu | Gln | Cys | Glu | Gly | Pro | Val | Cys | Thr | Glu | Glu | Ser | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Cys | His | Thr | Glu | Asp | Asp | Leu | Thr | Asp | Ala | Arg | Glu | Ala | Gly | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gln | Val | Lys | Ala | Tyr | Thr | Phe | Ser | Glu | Pro | Phe | His | Leu | Ile | Val |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Tyr | Asp | Trp | Leu | Ile | Leu | Gln | Gly | Pro | Ala | Lys | Pro | Val | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Glu | Gly | Asp | Leu | Leu | Val | Leu | Arg | Cys | Gln | Ala | Trp | Gln | Asp | Trp |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Pro | Leu | Thr | Gln | Val | Thr | Phe | Tyr | Arg | Asp | Gly | Ser | Ala | Leu | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Pro | Pro | Gly | Pro | Asn | Arg | Glu | Phe | Ser | Ile | Thr | Val | Val | Gln | Lys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Asp | Ser | Gly | His | Tyr | His | Cys | Ser | Gly | Ile | Phe | Gln | Ser | Pro |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Pro | Gly | Ile | Pro | Glu | Thr | Ala | Ser | Val | Val | Ala | Ile | Thr | Val | 155 | 160 | 165 |
| Gln | Glu | Leu | Phe | Pro | Ala | Pro | Ile | Leu | Arg | Ala | Val | Pro | Ser | Ala | 170 | 175 | 180 |
| Glu | Pro | Gln | Ala | Gly | Ser | Pro | Met | Thr | Leu | Ser | Cys | Gln | Thr | Lys | 185 | 190 | 195 |
| Leu | Pro | Leu | Gln | Arg | Ser | Ala | Ala | Arg | Leu | Leu | Phe | Ser | Phe | Tyr | 200 | 205 | 210 |
| Lys | Asp | Gly | Arg | Ile | Val | Gln | Ser | Arg | Gly | Leu | Ser | Ser | Glu | Phe | 215 | 220 | 225 |
| Gln | Ile | Pro | Thr | Ala | Ser | Glu | Asp | His | Ser | Gly | Ser | Tyr | Trp | Cys | 230 | 235 | 240 |
| Glu | Ala | Ala | Thr | Glu | Asp | Asn | Gln | Val | Trp | Lys | Gln | Ser | Pro | Gln | 245 | 250 | 255 |
| Leu | Glu | Ile | Arg | Val | Gln | Gly | Ala | Ser | Ser | Ser | Ala | Ala | Pro | Pro | 260 | 265 | 270 |
| Thr | Leu | Asn | Pro | Ala | Pro | Gln | Lys | Ser | Ala | Ala | Pro | Gly | Thr | Ala | 275 | 280 | 285 |
| Pro | Glu | Glu | Ala | Pro | Gly | Pro | Leu | Pro | Pro | Pro | Pro | Thr | Pro | Ser | 290 | 295 | 300 |
| Ser | Glu | Asp | Pro | Gly | Phe | Ser | Ser | Pro | Leu | Gly | Met | Pro | Asp | Pro | 305 | 310 | 315 |
| His | Leu | Tyr | His | Gln | Met | Gly | Leu | Leu | Leu | Lys | His | Met | Gln | Asp | 320 | 325 | 330 |
| Val | Arg | Val | Leu | Leu | Gly | His | Leu | Leu | Met | Glu | Leu | Arg | Glu | Leu | 335 | 340 | 345 |
| Ser | Gly | His | Gln | Lys | Pro | Gly | Thr | Thr | Lys | Ala | Thr | Ala | Glu | | 350 | 355 | |

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 46

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<210> 47

<211> 18

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 47
tttccagcgc caattctc 18

<210> 48
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 48
agttcttgga ctgtgatagc cac 23

<210> 49
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 49
aaacttggtt gtcctcagtg gctg 24

<210> 50
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 50
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<210> 51
<211> 2181
<212> DNA
<213> Homo sapiens

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gcacctaaaca gtggacactt atggccgtcc catcctggaa gtgccagaga 200
gtgtaacagg accttggaag ggggatgtga atcttccctg cacctatgac 250
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ctcagaccct gtcaccatct ttctacgtga ctcttctgga gaccatatcc 350

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 <211> 321
 <212> PRT
 <213> Homo sapiens

<400> 52
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 35 40 45
 Leu Gln Gly Tyr Thr Gln Val Leu Val Lys Trp Leu Val Gln Arg
 50 55 60
 Gly Ser Asp Pro Val Thr Ile Phe Leu Arg Asp Ser Ser Gly Asp
 65 70 75
 His Ile Gln Gln Ala Lys Tyr Gln Gly Arg Leu His Val Ser His
 80 85 90
 Lys Val Pro Gly Asp Val Ser Leu Gln Leu Ser Thr Leu Glu Met
 95 100 105
 Asp Asp Arg Ser His Tyr Thr Cys Glu Val Thr Trp Gln Thr Pro
 110 115 120
 Asp Gly Asn Gln Val Val Arg Asp Lys Ile Thr Glu Leu Arg Val
 125 130 135
 Gln Lys Leu Ser Val Ser Lys Pro Thr Val Thr Thr Gly Ser Gly
 140 145 150
 Tyr Gly Phe Thr Val Pro Gln Gly Met Arg Ile Ser Leu Gln Cys
 155 160 165
 Gln Ala Arg Gly Ser Pro Pro Ile Ser Tyr Ile Trp Tyr Lys Gln
 170 175 180

| | | |
|-----------------|---------------------|-------------------------|
| Gln Thr Asn Asn | Gln Glu Pro Ile Lys | Val Ala Thr Leu Ser Thr |
| 185 | 190 | 195 |
| Leu Leu Phe Lys | Pro Ala Val Ile Ala | Asp Ser Gly Ser Tyr Phe |
| 200 | 205 | 210 |
| Cys Thr Ala Lys | Gly Gln Val Gly Ser | Glu Gln His Ser Asp Ile |
| 215 | 220 | 225 |
| Val Lys Phe Val | Val Lys Asp Ser Ser | Lys Leu Leu Lys Thr Lys |
| 230 | 235 | 240 |
| Thr Glu Ala Pro | Thr Thr Met Thr Tyr | Pro Leu Lys Ala Thr Ser |
| 245 | 250 | 255 |
| Thr Val Lys Gln | Ser Trp Asp Trp Thr | Thr Asp Met Asp Gly Tyr |
| 260 | 265 | 270 |
| Leu Gly Glu Thr | Ser Ala Gly Pro Gly | Lys Ser Leu Pro Val Phe |
| 275 | 280 | 285 |
| Ala Ile Ile Leu | Ile Ile Ser Leu Cys | Cys Met Val Val Phe Thr |
| 290 | 295 | 300 |
| Met Ala Tyr Ile | Met Leu Cys Arg Lys | Thr Ser Gln Gln Glu His |
| 305 | 310 | 315 |
| Val Tyr Glu Ala | Ala Arg | |
| 320 | | |

<210> 53
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 53
 tatccctcca attgagcacc ctgg 24

<210> 54
 <211> 21
 <212> DNA
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<220>
 <223> Synthetic oligonucleotide probe

<400> 54
 gtcggaagac atcccaacaa g 21

<210> 55
 <211> 24
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<220>

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<210> 59
 <211> 373
 <212> PRT
 <213> Homo sapiens

<400> 59
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 35 40 45
 Thr Leu Asp Ile Glu Trp Leu Leu Thr Asp Asn Glu Gly Asn Gln
 50 55 60
 Lys Val Val Ile Thr Tyr Ser Ser Arg His Val Tyr Asn Asn Leu
 65 70 75
 Thr Glu Glu Gln Lys Gly Arg Val Ala Phe Ala Ser Asn Phe Leu
 80 85 90
 Ala Gly Asp Ala Ser Leu Gln Ile Glu Pro Leu Lys Pro Ser Asp
 95 100 105
 Glu Gly Arg Tyr Thr Cys Lys Val Lys Asn Ser Gly Arg Tyr Val
 110 115 120
 Trp Ser His Val Ile Leu Lys Val Leu Val Arg Pro Ser Lys Pro
 125 130 135
 Lys Cys Glu Leu Glu Gly Glu Leu Thr Glu Gly Ser Asp Leu Thr
 140 145 150
 Leu Gln Cys Glu Ser Ser Ser Gly Thr Glu Pro Ile Val Tyr Tyr
 155 160 165
 Trp Gln Arg Ile Arg Glu Lys Glu Gly Glu Asp Glu Arg Leu Pro
 170 175 180

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<210> 64

<211> 655

<212> PRT

<213> Homo sapiens

<400> 64

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Thr | Ser | Pro | Ser | Ser | Ser | Thr | Ala | Leu | Ala | Ser | Cys | Ser |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Arg | Ile | Ala | Arg | Arg | Ala | Thr | Ala | Thr | Met | Ile | Ala | Gly | Ser | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Leu | Leu | Gly | Phe | Leu | Ser | Thr | Thr | Thr | Ala | Gln | Pro | Glu | Gln | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Lys | Ala | Ser | Asn | Leu | Ile | Gly | Thr | Tyr | Arg | His | Val | Asp | Arg | Ala | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Thr | Gly | Gln | Val | Leu | Thr | Cys | Asp | Lys | Cys | Pro | Ala | Gly | Thr | Tyr | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Ser | Glu | His | Cys | Thr | Asn | Thr | Ser | Leu | Arg | Val | Cys | Ser | Ser | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Cys | Pro | Val | Gly | Thr | Phe | Thr | Arg | His | Glu | Asn | Gly | Ile | Glu | Lys | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Cys | His | Asp | Cys | Ser | Gln | Pro | Cys | Pro | Trp | Pro | Met | Ile | Glu | Lys | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Leu | Pro | Cys | Ala | Ala | Leu | Thr | Asp | Arg | Glu | Cys | Thr | Cys | Pro | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Met | Phe | Gln | Ser | Asn | Ala | Thr | Cys | Ala | Pro | His | Thr | Val | Cys | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Pro | Val | Gly | Trp | Gly | Val | Arg | Lys | Lys | Gly | Thr | Glu | Thr | Glu | Asp | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Arg | Cys | Lys | Gln | Cys | Ala | Arg | Gly | Thr | Phe | Ser | Asp | Val | Pro | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ser | Ser | Val | Met | Lys | Cys | Lys | Ala | Tyr | Thr | Asp | Cys | Leu | Ser | Gln | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Asn | Leu | Val | Val | Ile | Lys | Pro | Gly | Thr | Lys | Glu | Thr | Asp | Asn | Val | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Cys | Gly | Thr | Leu | Pro | Ser | Phe | Ser | Ser | Ser | Thr | Ser | Pro | Ser | Pro | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Gly | Thr | Ala | Ile | Phe | Pro | Arg | Pro | Glu | His | Met | Glu | Thr | His | Glu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Val | Pro | Ser | Ser | Thr | Tyr | Val | Pro | Lys | Gly | Met | Asn | Ser | Thr | Glu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ser | Asn | Ser | Ser | Ala | Ser | Val | Arg | Pro | Lys | Val | Leu | Ser | Ser | Ile | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gln | Glu | Gly | Thr | Val | Pro | Asp | Asn | Thr | Ser | Ser | Ala | Arg | Gly | Lys | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Glu | Asp | Val | Asn | Lys | Thr | Leu | Pro | Asn | Leu | Gln | Val | Val | Asn | His | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Gln | Gln | Gly | Pro | His | His | Arg | His | Ile | Leu | Lys | Leu | Leu | Pro | Ser | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Met | Glu | Ala | Thr | Gly | Gly | Glu | Lys | Ser | Ser | Thr | Pro | Ile | Lys | Gly | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|
| | | | | 320 | | | | | | 325 | | | | | 330 |
| Pro | Lys | Arg | Gly | His 335 | Pro | Arg | Gln | Asn | Leu 340 | His | Lys | His | Phe | Asp 345 | |
| Ile | Asn | Glu | His | Leu 350 | Pro | Trp | Met | Ile | Val 355 | Leu | Phe | Leu | Leu | Leu 360 | |
| Val | Leu | Val | Val | Ile 365 | Val | Val | Cys | Ser | Ile 370 | Arg | Lys | Ser | Ser | Arg 375 | |
| Thr | Leu | Lys | Lys | Gly 380 | Pro | Arg | Gln | Asp | Pro 385 | Ser | Ala | Ile | Val | Glu 390 | |
| Lys | Ala | Gly | Leu | Lys 395 | Lys | Ser | Met | Thr | Pro 400 | Thr | Gln | Asn | Arg | Glu 405 | |
| Lys | Trp | Ile | Tyr | Tyr 410 | Cys | Asn | Gly | His | Gly 415 | Ile | Asp | Ile | Leu | Lys 420 | |
| Leu | Val | Ala | Ala | Gln 425 | Val | Gly | Ser | Gln | Trp 430 | Lys | Asp | Ile | Tyr | Gln 435 | |
| Phe | Leu | Cys | Asn | Ala 440 | Ser | Glu | Arg | Glu | Val 445 | Ala | Ala | Phe | Ser | Asn 450 | |
| Gly | Tyr | Thr | Ala | Asp 455 | His | Glu | Arg | Ala | Tyr 460 | Ala | Ala | Leu | Gln | His 465 | |
| Trp | Thr | Ile | Arg | Gly 470 | Pro | Glu | Ala | Ser | Leu 475 | Ala | Gln | Leu | Ile | Ser 480 | |
| Ala | Leu | Arg | Gln | His 485 | Arg | Arg | Asn | Asp | Val 490 | Val | Glu | Lys | Ile | Arg 495 | |
| Gly | Leu | Met | Glu | Asp 500 | Thr | Thr | Gln | Leu | Glu 505 | Thr | Asp | Lys | Leu | Ala 510 | |
| Leu | Pro | Met | Ser | Pro 515 | Ser | Pro | Leu | Ser | Pro 520 | Ser | Pro | Ile | Pro | Ser 525 | |
| Pro | Asn | Ala | Lys | Leu 530 | Glu | Asn | Ser | Ala | Leu 535 | Leu | Thr | Val | Glu | Pro 540 | |
| Ser | Pro | Gln | Asp | Lys 545 | Asn | Lys | Gly | Phe | Phe 550 | Val | Asp | Glu | Ser | Glu 555 | |
| Pro | Leu | Leu | Arg | Cys 560 | Asp | Ser | Thr | Ser | Ser 565 | Gly | Ser | Ser | Ala | Leu 570 | |
| Ser | Arg | Asn | Gly | Ser 575 | Phe | Ile | Thr | Lys | Glu 580 | Lys | Lys | Asp | Thr | Val 585 | |
| Leu | Arg | Gln | Val | Arg 590 | Leu | Asp | Pro | Cys | Asp 595 | Leu | Gln | Pro | Ile | Phe 600 | |
| Asp | Asp | Met | Leu | His 605 | Phe | Leu | Asn | Pro | Glu 610 | Glu | Leu | Arg | Val | Ile 615 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Ile | Pro | Gln | Ala | Glu | Asp | Lys | Leu | Asp | Arg | Leu | Phe | Glu |
| | | | | 620 | | | | | 625 | | | | | 630 |
| | | | | | | | | | | | | | | |
| Ile | Ile | Gly | Val | Lys | Ser | Gln | Glu | Ala | Ser | Gln | Thr | Leu | Leu | Asp |
| | | | | 635 | | | | | 640 | | | | | 645 |
| | | | | | | | | | | | | | | |
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<210> 66
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<212> PRT

<213> Homo sapiens

<400> 69

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| Met | Gly | Glu | Asn | Asp | Pro | Pro | Ala | Val | Glu | Ala | Pro | Phe | Ser | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Arg | Ser | Leu | Phe | Gly | Leu | Asp | Asp | Leu | Lys | Ile | Ser | Pro | Val | Ala |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Pro | Asp | Ala | Asp | Ala | Val | Ala | Ala | Gln | Ile | Leu | Ser | Leu | Leu | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Lys | Phe | Phe | Pro | Ile | Ile | Val | Ile | Gly | Ile | Ile | Ala | Leu | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Ala | Leu | Ala | Ile | Gly | Leu | Gly | Ile | His | Phe | Asp | Cys | Ser | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Tyr | Arg | Cys | Arg | Ser | Ser | Phe | Lys | Cys | Ile | Glu | Leu | Ile | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Arg | Cys | Asp | Gly | Val | Ser | Asp | Cys | Lys | Asp | Gly | Glu | Asp | Glu | Tyr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Arg | Cys | Val | Arg | Val | Gly | Gly | Gln | Asn | Ala | Val | Leu | Gln | Val | Phe |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 110 | | | | | 115 | | | | | 120 |
| Thr | Ala | Ala | Ser | Trp 125 | Lys | Thr | Met | Cys | Ser 130 | Asp | Asp | Trp | Lys | Gly 135 |
| His | Tyr | Ala | Asn | Val 140 | Ala | Cys | Ala | Gln | Leu 145 | Gly | Phe | Pro | Ser | Tyr 150 |
| Val | Ser | Ser | Asp | Asn 155 | Leu | Arg | Val | Ser | Ser 160 | Leu | Glu | Gly | Gln | Phe 165 |
| Arg | Glu | Glu | Phe | Val 170 | Ser | Ile | Asp | His | Leu 175 | Leu | Pro | Asp | Asp | Lys 180 |
| Val | Thr | Ala | Leu | His 185 | His | Ser | Val | Tyr | Val 190 | Arg | Glu | Gly | Cys | Ala 195 |
| Ser | Gly | His | Val | Val 200 | Thr | Leu | Gln | Cys | Thr 205 | Ala | Cys | Gly | His | Arg 210 |
| Arg | Gly | Tyr | Ser | Ser 215 | Arg | Ile | Val | Gly | Gly 220 | Asn | Met | Ser | Leu | Leu 225 |
| Ser | Gln | Trp | Pro | Trp 230 | Gln | Ala | Ser | Leu | Gln 235 | Phe | Gln | Gly | Tyr | His 240 |
| Leu | Cys | Gly | Gly | Ser 245 | Val | Ile | Thr | Pro | Leu 250 | Trp | Ile | Ile | Thr | Ala 255 |
| Ala | His | Cys | Val | Tyr 260 | Asp | Leu | Tyr | Leu | Pro 265 | Lys | Ser | Trp | Thr | Ile 270 |
| Gln | Val | Gly | Leu | Val 275 | Ser | Leu | Leu | Asp | Asn 280 | Pro | Ala | Pro | Ser | His 285 |
| Leu | Val | Glu | Lys | Ile 290 | Val | Tyr | His | Ser | Lys 295 | Tyr | Lys | Pro | Lys | Arg 300 |
| Leu | Gly | Asn | Asp | Ile 305 | Ala | Leu | Met | Lys | Leu 310 | Ala | Gly | Pro | Leu | Thr 315 |
| Phe | Asn | Glu | Met | Ile 320 | Gln | Pro | Val | Cys | Leu 325 | Pro | Asn | Ser | Glu | Glu 330 |
| Asn | Phe | Pro | Asp | Gly 335 | Lys | Val | Cys | Trp | Thr 340 | Ser | Gly | Trp | Gly | Ala 345 |
| Thr | Glu | Asp | Gly | Gly 350 | Asp | Ala | Ser | Pro | Val 355 | Leu | Asn | His | Ala | Ala 360 |
| Val | Pro | Leu | Ile | Ser 365 | Asn | Lys | Ile | Cys | Asn 370 | His | Arg | Asp | Val | Tyr 375 |
| Gly | Gly | Ile | Ile | Ser 380 | Pro | Ser | Met | Leu | Cys 385 | Ala | Gly | Tyr | Leu | Thr 390 |
| Gly | Gly | Val | Asp | Ser 395 | Cys | Gln | Gly | Asp | Ser 400 | Gly | Gly | Pro | Leu | Val 405 |

Cys Gln Glu Arg Arg Leu Trp Lys Leu Val Gly Ala Thr Ser Phe
410 415 420

Gly Ile Gly Cys Ala Glu Val Asn Lys Pro Gly Val Tyr Thr Arg
425 430 435

Val Thr Ser Phe Leu Asp Trp Ile His Glu Gln Met Glu Arg Asp
440 445 450

Leu Lys Thr

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gctcagcggc ggcgcggggc ctgcgcgagg gctccggagc tgactcgccg 200

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<211> 735

<212> PRT

<213> Homo sapiens

<400> 74

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Ala | Arg | Pro | Leu | Pro | Val | Ser | Pro | Ala | Arg | Ala | Leu | Leu | 1 | 5 | 10 | 15 |
| Leu | Ala | Leu | Ala | Gly | Ala | Leu | Leu | Ala | Pro | Cys | Glu | Ala | Arg | Gly | 20 | 25 | 30 | |
| Val | Ser | Leu | Trp | Asn | Gln | Gly | Arg | Ala | Asp | Glu | Val | Val | Ser | Ala | 35 | 40 | 45 | |
| Ser | Val | Arg | Ser | Gly | Asp | Leu | Trp | Ile | Pro | Val | Lys | Ser | Phe | Asp | 50 | 55 | 60 | |
| Ser | Lys | Asn | His | Pro | Glu | Val | Leu | Asn | Ile | Arg | Leu | Gln | Arg | Glu | 65 | 70 | 75 | |
| Ser | Lys | Glu | Leu | Ile | Ile | Asn | Leu | Glu | Arg | Asn | Glu | Gly | Leu | Ile | 80 | 85 | 90 | |
| Ala | Ser | Ser | Phe | Thr | Glu | Thr | His | Tyr | Leu | Gln | Asp | Gly | Thr | Asp | 95 | 100 | 105 | |
| Val | Ser | Leu | Ala | Arg | Asn | Tyr | Thr | Gly | His | Cys | Tyr | Tyr | His | Gly | 110 | 115 | 120 | |
| His | Val | Arg | Gly | Tyr | Ser | Asp | Ser | Ala | Val | Ser | Leu | Ser | Thr | Cys | 125 | 130 | 135 | |
| Ser | Gly | Leu | Arg | Gly | Leu | Ile | Val | Phe | Glu | Asn | Glu | Ser | Tyr | Val | 140 | 145 | 150 | |
| Leu | Glu | Pro | Met | Lys | Ser | Ala | Thr | Asn | Arg | Tyr | Lys | Leu | Phe | Pro | 155 | 160 | 165 | |
| Ala | Lys | Lys | Leu | Lys | Ser | Val | Arg | Gly | Ser | Cys | Gly | Ser | His | His | 170 | 175 | 180 | |
| Asn | Thr | Pro | Asn | Leu | Ala | Ala | Lys | Asn | Val | Phe | Pro | Pro | Pro | Ser | 185 | 190 | 195 | |
| Gln | Thr | Trp | Ala | Arg | Arg | His | Lys | Arg | Glu | Thr | Leu | Lys | Ala | Thr | 200 | 205 | 210 | |

| 500 | | | | | 505 | | | | | 510 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Gln | Asp | Val | Asp | Gly | Tyr | Cys | Tyr | Asn | Gly | Ile | Cys | Gln | Thr |
| | | | | 515 | | | | | 520 | | | | | 525 |
| His | Glu | Gln | Gln | Cys | Val | Thr | Leu | Trp | Gly | Pro | Gly | Ala | Lys | Pro |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Ala | Pro | Gly | Ile | Cys | Phe | Glu | Arg | Val | Asn | Ser | Ala | Gly | Asp | Pro |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Tyr | Gly | Asn | Cys | Gly | Lys | Val | Ser | Lys | Ser | Ser | Phe | Ala | Lys | Cys |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Glu | Met | Arg | Asp | Ala | Lys | Cys | Gly | Lys | Ile | Gln | Cys | Gln | Gly | Gly |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Ala | Ser | Arg | Pro | Val | Ile | Gly | Thr | Asn | Ala | Val | Ser | Ile | Glu | Thr |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Asn | Ile | Pro | Leu | Gln | Gln | Gly | Gly | Arg | Ile | Leu | Cys | Arg | Gly | Thr |
| | | | | 605 | | | | | 610 | | | | | 615 |
| His | Val | Tyr | Leu | Gly | Asp | Asp | Met | Pro | Asp | Pro | Gly | Leu | Val | Leu |
| | | | | 620 | | | | | 625 | | | | | 630 |
| Ala | Gly | Thr | Lys | Cys | Ala | Asp | Gly | Lys | Ile | Cys | Leu | Asn | Arg | Gln |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Cys | Gln | Asn | Ile | Ser | Val | Phe | Gly | Val | His | Glu | Cys | Ala | Met | Gln |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Cys | His | Gly | Arg | Gly | Val | Cys | Asn | Asn | Arg | Lys | Asn | Cys | His | Cys |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Glu | Ala | His | Trp | Ala | Pro | Pro | Phe | Cys | Asp | Lys | Phe | Gly | Phe | Gly |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Gly | Ser | Thr | Asp | Ser | Gly | Pro | Ile | Arg | Gln | Ala | Glu | Ala | Arg | Gln |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Glu | Ala | Ala | Glu | Ser | Asn | Arg | Glu | Arg | Gly | Gln | Gly | Gln | Glu | Pro |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Val | Gly | Ser | Gln | Glu | His | Ala | Ser | Thr | Ala | Ser | Leu | Thr | Leu | Ile |
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<222> 30, 94, 143, 156, 163, 179, 193, 369, 371, 381, 390, 473

<223> unknown base

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<400> 82
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<210> 89

<211> 2956

<212> DNA

<213> Homo sapiens

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 <213> Homo sapiens

<400> 90
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 Gly Gly Arg Trp Gly Ala Arg Ala Gln Glu Ala Ala Ala Ala Ala
 35 40 45
 Ala Asp Gly Pro Pro Ala Ala Asp Gly Glu Asp Gly Gln Asp Pro
 50 55 60
 His Ser Lys His Leu Tyr Thr Ala Asp Met Phe Thr His Gly Ile
 65 70 75
 Gln Ser Ala Ala His Phe Val Met Phe Phe Ala Pro Trp Cys Gly
 80 85 90
 His Cys Gln Arg Leu Gln Pro Thr Trp Asn Asp Leu Gly Asp Lys
 95 100 105
 Tyr Asn Ser Met Glu Asp Ala Lys Val Tyr Val Ala Lys Val Asp
 110 115 120
 Cys Thr Ala His Ser Asp Val Cys Ser Ala Gln Gly Val Arg Gly
 125 130 135
 Tyr Pro Thr Leu Lys Leu Phe Lys Pro Gly Gln Glu Ala Val Lys
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 Tyr Gln Gly Pro Arg Asp Phe Gln Thr Leu Glu Asn Trp Met Leu
 155 160 165
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TOPT "5332600

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| Pro | Pro | Ser | Ala | Pro | Glu | Leu | Lys | Gln | Gly | Leu | Tyr | Glu | Leu | Ser | 185 | 190 | 195 |
| Ala | Ser | Asn | Phe | Glu | Leu | His | Val | Ala | Gln | Gly | Asp | His | Phe | Ile | 200 | 205 | 210 |
| Lys | Phe | Phe | Ala | Pro | Trp | Cys | Gly | His | Cys | Lys | Ala | Leu | Ala | Pro | 215 | 220 | 225 |
| Thr | Trp | Glu | Gln | Leu | Ala | Leu | Gly | Leu | Glu | His | Ser | Glu | Thr | Val | 230 | 235 | 240 |
| Lys | Ile | Gly | Lys | Val | Asp | Cys | Thr | Gln | His | Tyr | Glu | Leu | Cys | Ser | 245 | 250 | 255 |
| Gly | Asn | Gln | Val | Arg | Gly | Tyr | Pro | Thr | Leu | Leu | Trp | Phe | Arg | Asp | 260 | 265 | 270 |
| Gly | Lys | Lys | Val | Asp | Gln | Tyr | Lys | Gly | Lys | Arg | Asp | Leu | Glu | Ser | 275 | 280 | 285 |
| Leu | Arg | Glu | Tyr | Val | Glu | Ser | Gln | Leu | Gln | Arg | Thr | Glu | Thr | Gly | 290 | 295 | 300 |
| Ala | Thr | Glu | Thr | Val | Thr | Pro | Ser | Glu | Ala | Pro | Val | Leu | Ala | Ala | 305 | 310 | 315 |
| Glu | Pro | Glu | Ala | Asp | Lys | Gly | Thr | Val | Leu | Ala | Leu | Thr | Glu | Asn | 320 | 325 | 330 |
| Asn | Phe | Asp | Asp | Thr | Ile | Ala | Glu | Gly | Ile | Thr | Phe | Ile | Lys | Phe | 335 | 340 | 345 |
| Tyr | Ala | Pro | Trp | Cys | Gly | His | Cys | Lys | Thr | Leu | Ala | Pro | Thr | Trp | 350 | 355 | 360 |
| Glu | Glu | Leu | Ser | Lys | Lys | Glu | Phe | Pro | Gly | Leu | Ala | Gly | Val | Lys | 365 | 370 | 375 |
| Ile | Ala | Glu | Val | Asp | Cys | Thr | Ala | Glu | Arg | Asn | Ile | Cys | Ser | Lys | 380 | 385 | 390 |
| Tyr | Ser | Val | Arg | Gly | Tyr | Pro | Thr | Leu | Leu | Leu | Phe | Arg | Gly | Gly | 395 | 400 | 405 |
| Lys | Lys | Val | Ser | Glu | His | Ser | Gly | Gly | Arg | Asp | Leu | Asp | Ser | Leu | 410 | 415 | 420 |
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<211> 21

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<223> Synthetic oligonucleotide probe

<400> 92

ccaagccaac acactctaca g 21

<210> 93

<211> 24

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<223> Synthetic oligonucleotide probe

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<210> 94

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 94

gtcaaaggg gatatatcgc cac 23

<210> 95

<211> 49

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<213> Homo sapiens

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| 80 | 85 | 90 |
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| Leu Gly Ile Pro Gly Glu Lys Gly Lys 110 | Ala Gly Thr Val Cys Asp 115 | |
| Cys Gly Arg Tyr Arg Lys Phe Val Gly 125 | Gln Leu Asp Ile Ser Ile 130 | |
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| Gly Met Leu Ala Met Pro Lys Asp Glu 185 | Ala Ala Asn Thr Leu Ile 190 | |
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| Asp Pro Tyr Gly His Glu Asp Cys Val 245 | Glu Met Leu Ser Ser Gly 250 | |
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<212> DNA

<213> Homo sapiens

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 gtcttccggc ctggggatgt tttcttcaac actggggacc tgctggtctg 1850
 cgatgaccaa ggttttctcc gcttccatga tcgtactgga gacaccttca 1900
 ggtggaaggg ggagaatgtg gccacaaccg aggtggcaga ggtcttcgag 1950
 gccotagatt ttcttcagga ggtgaacgtc tatggagtca ctgtgccagg 2000
 gcatgaaggc agggctggaa tggcagccct agttctgcgt cccccccacg 2050
 ctttggaacct tatgcagctc tacaccacg tgtctgagaa cttgccacct 2100
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<210> 102

<211> 730

<212> PRT

<213> Homo sapiens

<400> 102

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Gly | Val | Cys | Gln | Arg | Thr | Arg | Ala | Pro | Trp | Lys | Glu | Lys | Ser | 1 | 5 | 10 | 15 |
| Gln | Leu | Glu | Arg | Ala | Ala | Leu | Gly | Phe | Arg | Lys | Gly | Gly | Ser | Gly | 20 | 25 | 30 | |
| Met | Phe | Ala | Ser | Gly | Trp | Asn | Gln | Thr | Val | Pro | Ile | Glu | Glu | Ala | 35 | 40 | 45 | |
| Gly | Ser | Met | Ala | Ala | Leu | Leu | Leu | Leu | Pro | Leu | Leu | Leu | Leu | Leu | 50 | 55 | 60 | |
| Pro | Leu | Leu | Leu | Leu | Lys | Leu | His | Leu | Trp | Pro | Gln | Leu | Arg | Trp | 65 | 70 | 75 | |
| Leu | Pro | Ala | Asp | Leu | Ala | Phe | Ala | Val | Arg | Ala | Leu | Cys | Cys | Lys | 80 | 85 | 90 | |
| Arg | Ala | Leu | Arg | Ala | Arg | Ala | Leu | Ala | Ala | Ala | Ala | Ala | Asp | Pro | 95 | 100 | 105 | |
| Glu | Gly | Pro | Glu | Gly | Gly | Cys | Ser | Leu | Ala | Trp | Arg | Leu | Ala | Glu | 110 | 115 | 120 | |
| Leu | Ala | Gln | Gln | Arg | Ala | Ala | His | Thr | Phe | Leu | Ile | His | Gly | Ser | 125 | 130 | 135 | |
| Arg | Arg | Phe | Ser | Tyr | Ser | Glu | Ala | Glu | Arg | Glu | Ser | Asn | Arg | Ala | 140 | 145 | 150 | |
| Ala | Arg | Ala | Phe | Leu | Arg | Ala | Leu | Gly | Trp | Asp | Trp | Gly | Pro | Asp | 155 | 160 | 165 | |
| Gly | Gly | Asp | Ser | Gly | Glu | Gly | Ser | Ala | Gly | Glu | Gly | Glu | Arg | Ala | 170 | 175 | 180 | |
| Ala | Pro | Gly | Ala | Gly | Asp | Ala | Ala | Ala | Gly | Ser | Gly | Ala | Glu | Phe | 185 | 190 | 195 | |
| Ala | Gly | Gly | Asp | Gly | Ala | Ala | Arg | Gly | Gly | Gly | Ala | Ala | Ala | Pro | 200 | 205 | 210 | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Leu Ser Pro Gly | Ala Thr Val Ala Leu | Leu Leu Pro Ala Gly Pro | 215 | 220 | 225 |
| Glu Phe Leu Trp | Leu Trp Phe Gly Leu | Ala Lys Ala Gly Leu Arg | 230 | 235 | 240 |
| Thr Ala Phe Val | Pro Thr Ala Leu Arg | Arg Gly Pro Leu Leu His | 245 | 250 | 255 |
| Cys Leu Arg Ser | Cys Gly Ala Arg Ala | Leu Val Leu Ala Pro Glu | 260 | 265 | 270 |
| Phe Leu Glu Ser | Leu Glu Pro Asp Leu | Pro Ala Leu Arg Ala Met | 275 | 280 | 285 |
| Gly Leu His Leu | Trp Ala Ala Gly Pro | Gly Thr His Pro Ala Gly | 290 | 295 | 300 |
| Ile Ser Asp Leu | Leu Ala Glu Val Ser | Ala Glu Val Asp Gly Pro | 305 | 310 | 315 |
| Val Pro Gly Tyr | Leu Ser Ser Pro Gln | Ser Ile Thr Asp Thr Cys | 320 | 325 | 330 |
| Leu Tyr Ile Phe | Thr Ser Gly Thr Thr | Gly Leu Pro Lys Ala Ala | 335 | 340 | 345 |
| Arg Ile Ser His | Leu Lys Ile Leu Gln | Cys Gln Gly Phe Tyr Gln | 350 | 355 | 360 |
| Leu Cys Gly Val | His Gln Glu Asp Val | Ile Tyr Leu Ala Leu Pro | 365 | 370 | 375 |
| Leu Tyr His Met | Ser Gly Ser Leu Leu | Gly Ile Val Gly Cys Met | 380 | 385 | 390 |
| Gly Ile Gly Ala | Thr Val Val Leu Lys | Ser Lys Phe Ser Ala Gly | 395 | 400 | 405 |
| Gln Phe Trp Glu | Asp Cys Gln Gln His | Arg Val Thr Val Phe Gln | 410 | 415 | 420 |
| Tyr Ile Gly Glu | Leu Cys Arg Tyr Leu | Val Asn Gln Pro Pro Ser | 425 | 430 | 435 |
| Lys Ala Glu Arg | Gly His Lys Val Arg | Leu Ala Val Gly Ser Gly | 440 | 445 | 450 |
| Leu Arg Pro Asp | Thr Trp Glu Arg Phe | Val Arg Arg Phe Gly Pro | 455 | 460 | 465 |
| Leu Gln Val Leu | Glu Thr Tyr Gly Leu | Thr Glu Gly Asn Val Ala | 470 | 475 | 480 |
| Thr Ile Asn Tyr | Thr Gly Gln Arg Gly | Ala Val Gly Arg Ala Ser | 485 | 490 | 495 |
| Trp Leu Tyr Lys | His Ile Phe Pro Phe | Ser Leu Ile Arg Tyr Asp | | | |

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<211> 18
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<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

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ggagaatgtg gccacaac 18

<210> 105
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 105
gccctggcac agtgactcca tagacg 26

<210> 106
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 106
atccacttca gcggacac 18

<210> 107
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 107
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<210> 108
<211> 2579
<212> DNA
<213> Homo sapiens

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acgcgcgcac acacactcgc tctcgcttgc ccattctcct cccgggggag 150
ccggcgcgcg ctcccacctt tgccgcacac tccggcgagc cgagcccgcg 200

gcgctccagg attctgoggc tcggaactcg gattgcagct ctgaaccccc 250
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 gcaaactcga atttgaaaac cttgtggaag agacaagcca ttttgtgcgc 850
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 cctggagaat gcagaaaagt cactaaatga tatgtttgta cggacctatg 950
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<210> 109

<211> 555

<212> PRT

<213> Homo sapiens

<400> 109

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Ser | Trp | Ile | Gly | Ala | Val | Ile | Leu | Pro | Leu | Leu | Gly | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Ser | Leu | Pro | Ala | Gly | Ala | Asp | Val | Lys | Ala | Arg | Ser | Cys |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Glu | Val | Arg | Gln | Ala | Tyr | Gly | Ala | Lys | Gly | Phe | Ser | Leu | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asp | Ile | Pro | Tyr | Gln | Glu | Ile | Ala | Gly | Glu | His | Leu | Arg | Ile | Cys |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Gln | Glu | Tyr | Thr | Cys | Cys | Thr | Thr | Glu | Met | Glu | Asp | Lys | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Gln | Gln | Ser | Lys | Leu | Glu | Phe | Glu | Asn | Leu | Val | Glu | Glu | Thr | 80 | 85 | 90 |
| Ser | His | Phe | Val | Arg | Thr | Thr | Phe | Val | Ser | Arg | His | Lys | Lys | Phe | 95 | 100 | 105 |
| Asp | Glu | Phe | Phe | Arg | Glu | Leu | Leu | Glu | Asn | Ala | Glu | Lys | Ser | Leu | 110 | 115 | 120 |
| Asn | Asp | Met | Phe | Val | Arg | Thr | Tyr | Gly | Met | Leu | Tyr | Met | Gln | Asn | 125 | 130 | 135 |
| Ser | Glu | Val | Phe | Gln | Asp | Leu | Phe | Thr | Glu | Leu | Lys | Arg | Tyr | Tyr | 140 | 145 | 150 |
| Thr | Gly | Gly | Asn | Val | Asn | Leu | Glu | Glu | Met | Leu | Asn | Asp | Phe | Trp | 155 | 160 | 165 |
| Ala | Arg | Leu | Leu | Glu | Arg | Met | Phe | Gln | Leu | Ile | Asn | Pro | Gln | Tyr | 170 | 175 | 180 |
| His | Phe | Ser | Glu | Asp | Tyr | Leu | Glu | Cys | Val | Ser | Lys | Tyr | Thr | Asp | 185 | 190 | 195 |
| Gln | Leu | Lys | Pro | Phe | Gly | Asp | Val | Pro | Arg | Lys | Leu | Lys | Ile | Gln | 200 | 205 | 210 |
| Val | Thr | Arg | Ala | Phe | Ile | Ala | Ala | Arg | Thr | Phe | Val | Gln | Gly | Leu | 215 | 220 | 225 |
| Thr | Val | Gly | Arg | Glu | Val | Ala | Asn | Arg | Val | Ser | Lys | Val | Ser | Pro | 230 | 235 | 240 |
| Thr | Pro | Gly | Cys | Ile | Arg | Ala | Leu | Met | Lys | Met | Leu | Tyr | Cys | Pro | 245 | 250 | 255 |
| Tyr | Cys | Arg | Gly | Leu | Pro | Thr | Val | Arg | Pro | Cys | Asn | Asn | Tyr | Cys | 260 | 265 | 270 |
| Leu | Asn | Val | Met | Lys | Gly | Cys | Leu | Ala | Asn | Gln | Ala | Asp | Leu | Asp | 275 | 280 | 285 |
| Thr | Glu | Trp | Asn | Leu | Phe | Ile | Asp | Ala | Met | Leu | Leu | Val | Ala | Glu | 290 | 295 | 300 |
| Arg | Leu | Glu | Gly | Pro | Phe | Asn | Ile | Glu | Ser | Val | Met | Asp | Pro | Ile | 305 | 310 | 315 |
| Asp | Val | Lys | Ile | Ser | Glu | Ala | Ile | Met | Asn | Met | Gln | Glu | Asn | Ser | 320 | 325 | 330 |
| Met | Gln | Val | Ser | Ala | Lys | Val | Phe | Gln | Gly | Cys | Gly | Gln | Pro | Lys | 335 | 340 | 345 |
| Pro | Ala | Pro | Ala | Leu | Arg | Ser | Ala | Arg | Ser | Ala | Pro | Glu | Asn | Phe | 350 | 355 | 360 |
| Asn | Thr | Arg | Phe | Arg | Pro | Tyr | Asn | Pro | Glu | Glu | Arg | Pro | Thr | Thr | | | |

| | | |
|---|-----|-----|
| 365 | 370 | 375 |
| Ala Ala Gly Thr Ser Leu Asp Arg Leu Val Thr Asp Ile Lys Glu | | |
| 380 | 385 | 390 |
| Lys Leu Lys Leu Ser Lys Lys Val Trp Ser Ala Leu Pro Tyr Thr | | |
| 395 | 400 | 405 |
| Ile Cys Lys Asp Glu Ser Val Thr Ala Gly Thr Ser Asn Glu Glu | | |
| 410 | 415 | 420 |
| Glu Cys Trp Asn Gly His Ser Lys Ala Arg Tyr Leu Pro Glu Ile | | |
| 425 | 430 | 435 |
| Met Asn Asp Gly Leu Thr Asn Gln Ile Asn Asn Pro Glu Val Asp | | |
| 440 | 445 | 450 |
| Val Asp Ile Thr Arg Pro Asp Thr Phe Ile Arg Gln Gln Ile Met | | |
| 455 | 460 | 465 |
| Ala Leu Arg Val Met Thr Asn Lys Leu Lys Asn Ala Tyr Asn Gly | | |
| 470 | 475 | 480 |
| Asn Asp Val Asn Phe Gln Asp Thr Ser Asp Glu Ser Ser Gly Ser | | |
| 485 | 490 | 495 |
| Gly Ser Gly Ser Gly Cys Met Asp Asp Val Cys Pro Thr Glu Phe | | |
| 500 | 505 | 510 |
| Glu Phe Val Thr Thr Glu Ala Pro Ala Val Asp Pro Asp Arg Arg | | |
| 515 | 520 | 525 |
| Glu Val Asp Ser Ser Ala Ala Gln Arg Gly His Ser Leu Leu Ser | | |
| 530 | 535 | 540 |
| Trp Ser Leu Thr Cys Ile Val Leu Ala Leu Gln Arg Leu Cys Arg | | |
| 545 | 550 | 555 |

<210> 110
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 110
 aagcgtgaca gcgggcacgt c 21

<210> 111
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 111

tgacacagtct ctgcagtgcc cagg 24

<210> 112

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 112

gaatgctgga acgggcacag caaagccaga tacttgctg 40

<210> 113

<211> 4649

<212> DNA

<213> Homo sapiens

<400> 113

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cgccaactac gcaaagacca agcgggctcc gcgcggaccg gccgcggggc 150
tagggaccgc gctttggcct tcaggctccc tagcagcggg gaaaaggaat 200
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aacgtcgagg gcgctctggc cagcaaaagt tcctgtccac tgtgattctc 550
aattccttgc ttggtttttt tctccagaga acttttgggt ggagatatta 600
acttttttct tttttttttt ccttgggtgga agctgctcta gggagggggg 650
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 gtgcaaaact agttgcggtt tttccatta aaagtaataa cttactctt 3900

| | | | | | |
|-------------------------------------|-----|-------------------------|-----|--|-----|
| | 110 | | 115 | | 120 |
| Ile Cys Thr Pro Ser Arg Ser Gln Phe | 125 | Ile Thr Gly Lys Tyr Gln | 130 | | 135 |
| Ile His Thr Gly Leu Gln His Ser Ile | 140 | Ile Arg Pro Thr Gln Pro | 145 | | 150 |
| Asn Cys Leu Pro Leu Asp Asn Ala Thr | 155 | Leu Pro Gln Lys Leu Lys | 160 | | 165 |
| Glu Val Gly Tyr Ser Thr His Met Val | 170 | Gly Lys Trp His Leu Gly | 175 | | 180 |
| Phe Asn Arg Lys Glu Cys Met Pro Thr | 185 | Arg Arg Gly Phe Asp Thr | 190 | | 195 |
| Phe Phe Gly Ser Leu Leu Gly Ser Gly | 200 | Asp Tyr Tyr Thr His Tyr | 205 | | 210 |
| Lys Cys Asp Ser Pro Gly Met Cys Gly | 215 | Tyr Asp Leu Tyr Glu Asn | 220 | | 225 |
| Asp Asn Ala Ala Trp Asp Tyr Asp Asn | 230 | Gly Ile Tyr Ser Thr Gln | 235 | | 240 |
| Met Tyr Thr Gln Arg Val Gln Gln Ile | 245 | Leu Ala Ser His Asn Pro | 250 | | 255 |
| Thr Lys Pro Ile Phe Leu Tyr Thr Ala | 260 | Tyr Gln Ala Val His Ser | 265 | | 270 |
| Pro Leu Gln Ala Pro Gly Arg Tyr Phe | 275 | Glu His Tyr Arg Ser Ile | 280 | | 285 |
| Ile Asn Ile Asn Arg Arg Arg Tyr Ala | 290 | Ala Met Leu Ser Cys Leu | 295 | | 300 |
| Asp Glu Ala Ile Asn Asn Val Thr Leu | 305 | Ala Leu Lys Thr Tyr Gly | 310 | | 315 |
| Phe Tyr Asn Asn Ser Ile Ile Ile Tyr | 320 | Ser Ser Asp Asn Gly Gly | 325 | | 330 |
| Gln Pro Thr Ala Gly Gly Ser Asn Trp | 335 | Pro Leu Arg Gly Ser Lys | 340 | | 345 |
| Gly Thr Tyr Trp Glu Gly Gly Ile Arg | 350 | Ala Val Gly Phe Val His | 355 | | 360 |
| Ser Pro Leu Leu Lys Asn Lys Gly Thr | 365 | Val Cys Lys Glu Leu Val | 370 | | 375 |
| His Ile Thr Asp Trp Tyr Pro Thr Leu | 380 | Ile Ser Leu Ala Glu Gly | 385 | | 390 |
| Gln Ile Asp Glu Asp Ile Gln Leu Asp | 395 | Gly Tyr Asp Ile Trp Glu | 400 | | 405 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ile | Ser | Glu | Gly | Leu | Arg | Ser | Pro | Arg | Val | Asp | Ile | Leu | His |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Asn | Ile | Asp | Pro | Tyr | Thr | Pro | Arg | Gln | Lys | Met | Ala | Pro | Gly | Gln |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Gln | Ala | Met | Gly | Ser | Gly | Thr | Leu | Gln | Ser | Ser | Gln | Pro | Ser | Glu |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Cys | Ser | Thr | Gly | Asn | Cys | Leu | Gln | Glu | Ile | Leu | Ala | Thr | Ala | Thr |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Gly | Ser | Pro | Leu | Ser | Leu | Ser | Ala | Thr | Trp | Asp | Arg | Thr | Gly | Gly |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Thr | Met | Asn | Gly | Ser | Pro | Cys | Gln | Leu | Ala | Lys | Val | Tyr | Gly | Phe |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Ser | Thr | Ser | Gln | Pro | Thr | His | Met | Arg | Gly | Trp | Thr | Tyr | Leu | Thr |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Gly | Ile | Gln | Glu | Ser | | | | | | | | | | |
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 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

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 <210> 116
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 116
 ctctctgagt gtacatctgt gtgg 24

 <210> 117
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 <212> DNA
 <213> Artificial Sequence

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 <223> Synthetic oligonucleotide probe

 <220>
 <221> unsure
 <222> 33
 <223> unknown base

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cgg 53

<210> 118
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<212> DNA
<213> Homo sapiens

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<222> 2009, 2026, 2033, 2055, 2074, 2078, 2086
<223> unknown base

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gggctcagga ggaggaagga ggacccgtgc gagaatgcct ctgccctgga 150

gccttgcgct cccgctgctg ctctcctggg tggcaggtgg ttccgggaac 200

gcggccagtg caaggcatca cgggttggtta gcatcggcac gtcagcctgg 250

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gagtgcgtgg gaccaaacia atgcagatgc tttccaggat acaccgggaa 400

aacctgcagt caagatgtga atgagtgtgg aatgaaaccc cggccatgcc 450

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catgaaaaag aaggcaaaaa ttaaaaatgt taccacagaa cccaccagga 1050

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<210> 119
 <211> 338
 <212> PRT
 <213> Homo sapiens

<400> 119
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315

Gly Lys Lys Gly Asn Glu Glu Lys
335

<213> Artificial Sequence

<223> Synthetic oligonucleotide probe

cctcagtggc cacatgctca tq 22

<213> Artificial Sequence

<223> Synthetic oligonucleotide probe

ggctgcacgt atggctatcc atag 24

<213> Artificial Sequence

<223> Synthetic oligonucleotide probe

gataaactgt cagtacagct gtgaagacac agaagaaggg ccacagtccc 50

<213> Homo sapiens

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ggccgagtgg cagggacgac gcccagaatg ggaqctgact gatatggtgg 150

tgtgggtgac tggagcctcg agtgggaattg gtgaggagct ggcttaccag 200

ttgtctaaac taggagtttc tcttgtgctg tcagccagaa gagtgcattga 250

gctggaaagg gtgaaaagaa gatgcctaga gaatggcaat ttaaaagaaa 300

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<210> 124

<211> 289

<212> PRT

<213> Homo sapiens

<400> 124

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Val | Trp | Val | Thr | Gly | Ala | Ser | Ser | Gly | Ile | Gly | Glu | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ala | Tyr | Gln | Leu | Ser | Lys | Leu | Gly | Val | Ser | Leu | Val | Leu | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Arg | Arg | Val | His | Glu | Leu | Glu | Arg | Val | Lys | Arg | Arg | Cys | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Asn | Gly | Asn | Leu | Lys | Glu | Lys | Asp | Ile | Leu | Val | Leu | Pro | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Leu | Thr | Asp | Thr | Gly | Ser | His | Glu | Ala | Ala | Thr | Lys | Ala | Val |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gln | Glu | Phe | Gly | Arg | Ile | Asp | Ile | Leu | Val | Asn | Asn | Gly | Gly |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| 80 | | | | | | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Met | Ser | Gln | Arg | Ser | Leu | Cys | Met | Asp | Thr | Ser | Leu | Asp | Val | Tyr | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Arg | Lys | Leu | Ile | Glu | Leu | Asn | Tyr | Leu | Gly | Thr | Val | Ser | Leu | Thr | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Lys | Cys | Val | Leu | Pro | His | Met | Ile | Glu | Arg | Lys | Gln | Gly | Lys | Ile | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Val | Thr | Val | Asn | Ser | Ile | Leu | Gly | Ile | Ile | Ser | Val | Pro | Leu | Ser | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Ile | Gly | Tyr | Cys | Ala | Ser | Lys | His | Ala | Leu | Arg | Gly | Phe | Phe | Asn | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Gly | Leu | Arg | Thr | Glu | Leu | Ala | Thr | Tyr | Pro | Gly | Ile | Ile | Val | Ser | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Asn | Ile | Cys | Pro | Gly | Pro | Val | Gln | Ser | Asn | Ile | Val | Glu | Asn | Ser | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Leu | Ala | Gly | Glu | Val | Thr | Lys | Thr | Ile | Gly | Asn | Asn | Gly | Asp | Gln | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Ser | His | Lys | Met | Thr | Thr | Ser | Arg | Cys | Val | Arg | Leu | Met | Leu | Ile | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Ser | Met | Ala | Asn | Asp | Leu | Lys | Glu | Val | Trp | Ile | Ser | Glu | Gln | Pro | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Phe | Leu | Leu | Val | Thr | Tyr | Leu | Trp | Gln | Tyr | Met | Pro | Thr | Trp | Ala | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Trp | Trp | Ile | Thr | Asn | Lys | Met | Gly | Lys | Lys | Arg | Ile | Glu | Asn | Phe | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Lys | Ser | Gly | Val | Asp | Ala | Asp | Ser | Ser | Tyr | Phe | Lys | Ile | Phe | Lys | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Thr | Lys | His | Asp | | | | | | | | | | | | | | | | |

<210> 125

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 125

gcaatgaact gggagctgc 19

<210> 126

<211> 19

<212> DNA

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> Synthetic oligonucleotide probe

<400> 126

ctgtgaatag catcctggg 19

<210> 127

<211> 20

<212> DNA

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> Synthetic oligonucleotide probe

<400> 127

cttttcaagc cactggaggg 20

<210> 128

<211> 24

<212> DNA

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> Synthetic oligonucleotide probe

<400> 128

ctgtagacat ccaagctggt atcc 24

<210> 129

<211> 23

<212> DNA

<213> Artificial Sequence

$\langle 220 \rangle$

<223> Synthetic oligonucleotide probe

<400> 129

aagagtctgc atccacacca ctc 23

 $\langle 210 \rangle$ 130

<211> 46

<212> DNA

<213> Artificial Sequence

 $\langle 220 \rangle$

<223> Synthetic oligonucleotide probe

$\langle 400 \rangle$ 130

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<210> 131

<211> 2365

<212> DNA

<213> Homo sapiens

<400> 131

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| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 365 | | 370 | | 375 |
| Thr Arg Pro Glu | Glu Trp Gly Leu Lys | Gln Leu Ile Leu His | Gly | | |
| | 380 | 385 | 390 | | |
| Ala Tyr Thr His | Pro Glu Gly Gly Tyr | Asp Met Ala Leu Leu | Leu | | |
| | 395 | 400 | 405 | | |
| Leu Ala Gln Pro | Val Thr Leu Gly Ala | Ser Leu Arg Pro Leu | Cys | | |
| | 410 | 415 | 420 | | |
| Leu Pro Tyr Pro | Asp His His Leu Pro | Asp Gly Glu Arg Gly | Trp | | |
| | 425 | 430 | 435 | | |
| Val Leu Gly Arg | Ala Arg Pro Gly Ala | Gly Ile Ser Ser Leu | Gln | | |
| | 440 | 445 | 450 | | |
| Thr Val Pro Val | Thr Leu Leu Gly Pro | Arg Ala Cys Ser Arg | Leu | | |
| | 455 | 460 | 465 | | |
| His Ala Ala Pro | Gly Gly Asp Gly Ser | Pro Ile Leu Pro Gly | Met | | |
| | 470 | 475 | 480 | | |
| Val Cys Thr Ser | Ala Val Gly Glu Leu | Pro Ser Cys Glu Gly | Leu | | |
| | 485 | 490 | 495 | | |
| Ser Gly Ala Pro | Leu Val His Glu Val | Arg Gly Thr Trp Phe | Leu | | |
| | 500 | 505 | 510 | | |
| Ala Gly Leu His | Ser Phe Gly Asp Ala | Cys Gln Gly Pro Ala | Arg | | |
| | 515 | 520 | 525 | | |
| Pro Ala Val Phe | Thr Ala Leu Pro Ala | Tyr Glu Asp Trp Val | Ser | | |
| | 530 | 535 | 540 | | |
| Ser Leu Asp Trp | Gln Val Tyr Phe Ala | Glu Glu Pro Glu Pro | Glu | | |
| | 545 | 550 | 555 | | |
| Ala Glu Pro Gly | Ser Cys Leu Ala Asn | Ile Ser Gln Pro Thr | Ser | | |
| | 560 | 565 | 570 | | |

Cys

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<211> 24

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 134

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 134

gtgggcagca gtttagcaccg cctc 24

<210> 135

<211> 45

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 135

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<210> 136

<211> 1998

<212> DNA

<213> Homo sapiens

<400> 136

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| 35 | | 40 | 45 |
| Ala Thr Leu Cys | Cys Ser Phe Ser Pro | Glu Pro Gly Phe Ser | Leu |
| 50 | | 55 | 60 |
| Ala Gln Leu Asn | Leu Ile Trp Gln Leu | Thr Asp Thr Lys Gln | Leu |
| 65 | | 70 | 75 |
| Val His Ser Phe | Ala Glu Gly Gln Asp | Gln Gly Ser Ala Tyr | Ala |
| 80 | | 85 | 90 |
| Asn Arg Thr Ala | Leu Phe Pro Asp Leu | Leu Ala Gln Gly Asn | Ala |
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| Thr Cys Phe Val | Ser Ile Arg Asp Phe | Gly Ser Ala Ala Val | Ser |
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| Ser Ser Tyr Gln | Gly Tyr Pro Glu Ala | Glu Val Phe Trp Gln | Asp |
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| Val Leu Gly Ala | Asn Gly Thr Tyr Ser | Cys Leu Val Arg Asn | Pro |
| 215 | | 220 | 225 |
| Val Leu Gln Gln | Asp Ala His Xaa Ser | Val Thr Ile Thr Gly | Gln |
| 230 | | 235 | 240 |
| Pro Met Thr Phe | Pro Pro Glu Ala Leu | Trp Val Thr Val Gly | Leu |
| 245 | | 250 | 255 |
| Ser Val Cys Leu | Ile Ala Leu Leu Val | Ala Leu Ala Phe Val | Cys |
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| Trp Arg Lys Ile | Lys Gln Ser Cys Glu | Glu Glu Asn Ala Gly | Ala |
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Asp Leu Met Leu Val His Tyr Glu Gly Tyr Leu Glu Lys Asp Gly
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Ser Leu Phe His Ser Thr His Lys His Asn Asn Gly Gln Pro Ile
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Trp Phe Thr Leu Gly Ile Leu Glu Ala Leu Lys Gly Trp Asp Gln
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Gly Leu Lys Gly Met Cys Val Gly Glu Lys Arg Lys Leu Ile Ile
95 100 105

Pro Pro Ala Leu Gly Tyr Gly Lys Glu Gly Lys Gly Lys Ile Pro
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Pro Glu Ser Thr Leu Ile Phe Asn Ile Asp Leu Leu Glu Ile Arg
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Asn Gly Pro Arg Ser His Glu Ser Phe Gln Glu Met Asp Leu Asn
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 35 40 45
 Ala Arg Leu Pro Cys Thr Phe Asn Ser Cys Tyr Thr Val Asn His
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 Lys Gln Phe Ser Leu Asn Trp Thr Tyr Gln Glu Cys Asn Asn Cys
 65 70 75
 Ser Glu Glu Met Phe Leu Gln Phe Arg Met Lys Ile Ile Asn Leu
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 Lys Leu Glu Arg Phe Gln Asp Arg Val Glu Phe Ser Gly Asn Pro
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 Ser Lys Tyr Asp Val Ser Val Met Leu Arg Asn Val Gln Pro Glu
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 Asp Glu Gly Ile Tyr Asn Cys Tyr Ile Met Asn Pro Pro Asp Arg
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 His Arg Gly His Gly Lys Ile His Leu Gln Val Leu Met Glu Glu
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 Pro Pro Glu Arg Asp Ser Thr Val Ala Val Ile Val Gly Ala Ser
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 Val Gly Gly Phe Leu Ala Val Val Ile Leu Val Leu Met Val Val
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| Gly | Leu | Leu | Phe | Leu | Leu | Leu | Leu | Leu | Met | Leu | Leu | Ala | Asp | Pro |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Ala | Leu | Pro | Ala | Gly | Arg | His | Pro | Pro | Val | Val | Leu | Val | Pro | Gly |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Asp | Leu | Gly | Asn | Gln | Leu | Glu | Ala | Lys | Leu | Asp | Lys | Pro | Thr | Val |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Val | His | Tyr | Leu | Cys | Ser | Lys | Lys | Thr | Glu | Ser | Tyr | Phe | Thr | Ile |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Trp | Leu | Asn | Leu | Glu | Leu | Leu | Leu | Pro | Val | Ile | Ile | Asp | Cys | Trp |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Ile | Asp | Asn | Ile | Arg | Leu | Val | Tyr | Asn | Lys | Thr | Ser | Arg | Ala | Thr |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Gln | Phe | Pro | Asp | Gly | Val | Asp | Val | Arg | Val | Pro | Gly | Phe | Gly | Lys |

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| Thr | Phe | Ser | Leu | Glu | Phe | Leu | Asp | Pro | Ser | Lys | Ser | Ser | Val | Gly |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Tyr | Phe | His | Thr | Met | Val | Glu | Ser | Leu | Val | Gly | Trp | Gly | Tyr |
| | | | | 140 | | | | | 145 | | | | | 150 |
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| Ala | Pro | Asn | Glu | Asn | Gly | Pro | Tyr | Phe | Leu | Ala | Leu | Arg | Glu | Met |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ile | Glu | Glu | Met | Tyr | Gln | Leu | Tyr | Gly | Gly | Pro | Val | Val | Leu | Val |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ala | His | Ser | Met | Gly | Asn | Met | Tyr | Thr | Leu | Tyr | Phe | Leu | Gln | Arg |
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| Gln | Pro | Gln | Ala | Trp | Lys | Asp | Lys | Tyr | Ile | Arg | Ala | Phe | Val | Ser |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Gly | Ala | Pro | Trp | Gly | Gly | Val | Ala | Lys | Thr | Leu | Arg | Val | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Ser | Gly | Asp | Asn | Asn | Arg | Ile | Pro | Val | Ile | Gly | Pro | Leu | Lys |
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| Pro | Thr | Ile | Asn | Tyr | Thr | Leu | Arg | Asp | Tyr | Arg | Lys | Phe | Phe | Gln |
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| Gly | Thr | Val | Asn | Leu | Lys | Ser | Ala | Leu | Gln | Cys | Gln | Ala | Trp | Gln |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Ser | Arg | Gln | Glu | His | Gln | Val | Leu | Leu | Gln | Glu | Leu | Pro | Gly | Ser |
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| Glu | His | Ile | Glu | Met | Leu | Ala | Asn | Ala | Thr | Thr | Leu | Ala | Tyr | Leu |
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| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Leu | Arg | Arg | Phe | Leu | Thr | Gln | Pro | Gln | Val | Val | Ala | Arg | Ala |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Val | Cys | Leu | Val | Phe | Ala | Leu | Ile | Val | Phe | Ser | Cys | Ile | Tyr | Gly | |
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| Glu | Gly | Tyr | Ser | Asn | Ala | His | Glu | Ser | Lys | Gln | Met | Tyr | Cys | Val | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Phe | Asn | Arg | Asn | Glu | Asp | Ala | Cys | Arg | Tyr | Gly | Ser | Ala | Ile | Gly | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Leu | Ala | Phe | Leu | Ala | Ser | Ala | Phe | Phe | Leu | Val | Val | Asp | Ala | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Tyr | Phe | Pro | Gln | Ile | Ser | Asn | Ala | Thr | Asp | Arg | Lys | Tyr | Leu | Val | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ile | Gly | Asp | Leu | Leu | Phe | Ser | Ala | Leu | Trp | Thr | Phe | Leu | Trp | Phe | |
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| Val | Gly | Phe | Cys | Phe | Leu | Thr | Asn | Gln | Trp | Ala | Val | Thr | Asn | Pro | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Lys | Asp | Val | Leu | Val | Gly | Ala | Asp | Ser | Val | Arg | Ala | Ala | Ile | Thr | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Ser | Phe | Phe | Ser | Ile | Phe | Ser | Trp | Gly | Val | Leu | Ala | Ser | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ala | Tyr | Gln | Arg | Tyr | Lys | Ala | Gly | Val | Asp | Asp | Phe | Ile | Gln | Asn | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Tyr | Val | Asp | Pro | Thr | Pro | Asp | Pro | Asn | Thr | Ala | Tyr | Ala | Ser | Tyr | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Pro | Gly | Ala | Ser | Val | Asp | Asn | Tyr | Gln | Gln | Pro | Pro | Phe | Thr | Gln | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Asn | Ala | Glu | Thr | Thr | Glu | Gly | Tyr | Gln | Pro | Pro | Pro | Val | Tyr | | |
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 <400> 169

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Pro | Val | Ala | Glu | Ala | Pro | Gln | Val | Ala | Gly | Gly | Gln | Gly | Asp | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Gly | Gly | Asp | Gly | Glu | Glu | Ala | Glu | Pro | Glu | Gly | Met | Phe | Lys | Ala | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Cys | Glu | Asp | Ser | Lys | Arg | Lys | Ala | Arg | Gly | Tyr | Leu | Arg | Leu | Val | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Pro | Leu | Phe | Val | Leu | Leu | Ala | Leu | Leu | Val | Leu | Ala | Ser | Ala | Gly | |
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| Val | Leu | Leu | Trp | Tyr | Phe | Leu | Gly | Tyr | Lys | Ala | Glu | Val | Met | Val | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Gln | Val | Tyr | Ser | Gly | Ser | Leu | Arg | Val | Leu | Asn | Arg | His | Phe | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ser | Gln | Asp | Leu | Thr | Arg | Arg | Glu | Ser | Ser | Ala | Phe | Arg | Ser | Glu | |
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| Thr | Ala | Lys | Ala | Gln | Lys | Met | Leu | Lys | Glu | Leu | Ile | Thr | Ser | Thr | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Arg | Leu | Gly | Thr | Tyr | Tyr | Asn | Ser | Ser | Ser | Val | Tyr | Ser | Phe | Gly | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Glu | Gly | Pro | Leu | Thr | Cys | Phe | Phe | Trp | Phe | Ile | Leu | Gln | Ile | Pro | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Glu | His | Arg | Arg | Leu | Met | Leu | Ser | Pro | Glu | Val | Val | Gln | Ala | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Val | Glu | Glu | Leu | Leu | Ser | Thr | Val | Asn | Ser | Ser | Ala | Ala | Val | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Pro | Tyr | Arg | Ala | Glu | Tyr | Glu | Val | Asp | Pro | Glu | Gly | Leu | Val | Ile | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Leu | Glu | Ala | Ser | Val | Lys | Asp | Ile | Ala | Ala | Leu | Asn | Ser | Thr | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gly | Cys | Tyr | Arg | Tyr | Ser | Tyr | Val | Gly | Gln | Gly | Gln | Val | Leu | Arg | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Lys | Gly | Pro | Asp | His | Leu | Ala | Ser | Ser | Cys | Leu | Trp | His | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gln | Gly | Pro | Lys | Asp | Leu | Met | Leu | Lys | Leu | Arg | Leu | Glu | Trp | Thr | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Ala | Glu | Cys | Arg | Asp | Arg | Leu | Ala | Met | Tyr | Asp | Val | Ala | Gly | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Pro | Leu | Glu | Lys | Arg | Leu | Ile | Thr | Ser | Val | Tyr | Gly | Cys | Ser | Arg | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Gln | Glu | Pro | Val | Val | Glu | Val | Leu | Ala | Ser | Gly | Ala | Ile | Met | Ala | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 290 | | | | | 295 | | | | | 300 |
| Val | Val | Trp | Lys | Lys 305 | Gly | Leu | His | Ser | Tyr 310 | Tyr | Asp | Pro | Phe | Val 315 |
| Leu | Ser | Val | Gln | Pro 320 | Val | Val | Phe | Gln | Ala 325 | Cys | Glu | Val | Asn | Leu 330 |
| Thr | Leu | Asp | Asn | Arg 335 | Leu | Asp | Ser | Gln | Gly 340 | Val | Leu | Ser | Thr | Pro 345 |
| Tyr | Phe | Pro | Ser | Tyr 350 | Tyr | Ser | Pro | Gln | Thr 355 | His | Cys | Ser | Trp | His 360 |
| Leu | Thr | Val | Pro | Ser 365 | Leu | Asp | Tyr | Gly | Leu 370 | Ala | Leu | Trp | Phe | Asp 375 |
| Ala | Tyr | Ala | Leu | Arg 380 | Arg | Gln | Lys | Tyr | Asp 385 | Leu | Pro | Cys | Thr | Gln 390 |
| Gly | Gln | Trp | Thr | Ile 395 | Gln | Asn | Arg | Arg | Leu 400 | Cys | Gly | Leu | Arg | Ile 405 |
| Leu | Gln | Pro | Tyr | Ala 410 | Glu | Arg | Ile | Pro | Val 415 | Val | Ala | Thr | Ala | Gly 420 |
| Ile | Thr | Ile | Asn | Phe 425 | Thr | Ser | Gln | Ile | Ser 430 | Leu | Thr | Gly | Pro | Gly 435 |
| Val | Arg | Val | His | Tyr 440 | Gly | Leu | Tyr | Asn | Gln 445 | Ser | Asp | Pro | Cys | Pro 450 |
| Gly | Glu | Phe | Leu | Cys 455 | Ser | Val | Asn | Gly | Leu 460 | Cys | Val | Pro | Ala | Cys 465 |
| Asp | Gly | Val | Lys | Asp 470 | Cys | Pro | Asn | Gly | Leu 475 | Asp | Glu | Arg | Asn | Cys 480 |
| Val | Cys | Arg | Ala | Thr 485 | Phe | Gln | Cys | Lys | Glu 490 | Asp | Ser | Thr | Cys | Ile 495 |
| Ser | Leu | Pro | Lys | Val 500 | Cys | Asp | Gly | Gln | Pro 505 | Asp | Cys | Leu | Asn | Gly 510 |
| Ser | Asp | Glu | Glu | Gln 515 | Cys | Gln | Glu | Gly | Val 520 | Pro | Cys | Gly | Thr | Phe 525 |
| Thr | Phe | Gln | Cys | Glu 530 | Asp | Arg | Ser | Cys | Val 535 | Lys | Lys | Pro | Asn | Pro 540 |
| Gln | Cys | Asp | Gly | Arg 545 | Pro | Asp | Cys | Arg | Asp 550 | Gly | Ser | Asp | Glu | Glu 555 |
| His | Cys | Asp | Cys | Gly 560 | Leu | Gln | Gly | Pro | Ser 565 | Ser | Arg | Ile | Val | Gly 570 |
| Gly | Ala | Val | Ser | Ser 575 | Glu | Gly | Glu | Trp | Pro 580 | Trp | Gln | Ala | Ser | Leu 585 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gln | Val | Arg | Gly | Arg | His | Ile | Cys | Gly | Gly | Ala | Leu | Ile | Ala | Asp | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Arg | Trp | Val | Ile | Thr | Ala | Ala | His | Cys | Phe | Gln | Glu | Asp | Ser | Met | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Ala | Ser | Thr | Val | Leu | Trp | Thr | Val | Phe | Leu | Gly | Lys | Val | Trp | Gln | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Asn | Ser | Arg | Trp | Pro | Gly | Glu | Val | Ser | Phe | Lys | Val | Ser | Arg | Leu | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Leu | Leu | His | Pro | Tyr | His | Glu | Glu | Asp | Ser | His | Asp | Tyr | Asp | Val | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Ala | Leu | Leu | Gln | Leu | Asp | His | Pro | Val | Val | Arg | Ser | Ala | Ala | Val | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Arg | Pro | Val | Cys | Leu | Pro | Ala | Arg | Ser | His | Phe | Phe | Glu | Pro | Gly | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Leu | His | Cys | Trp | Ile | Thr | Gly | Trp | Gly | Ala | Leu | Arg | Glu | Gly | Gly | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Pro | Ile | Ser | Asn | Ala | Leu | Gln | Lys | Val | Asp | Val | Gln | Leu | Ile | Pro | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Gln | Asp | Leu | Cys | Ser | Glu | Ala | Tyr | Arg | Tyr | Gln | Val | Thr | Pro | Arg | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Met | Leu | Cys | Ala | Gly | Tyr | Arg | Lys | Gly | Lys | Lys | Asp | Ala | Cys | Gln | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Gly | Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Lys | Ala | Leu | Ser | Gly | Arg | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Trp | Phe | Leu | Ala | Gly | Leu | Val | Ser | Trp | Gly | Leu | Gly | Cys | Gly | Arg | |
| | | | | 770 | | | | | 775 | | | | | 780 | |
| Pro | Asn | Tyr | Phe | Gly | Val | Tyr | Thr | Arg | Ile | Thr | Gly | Val | Ile | Ser | |
| | | | | 785 | | | | | 790 | | | | | 795 | |
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 <212> DNA
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<211> 3240
<212> DNA
<213> Homo sapiens

<400> 182

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acgcgctgga ggagtggagc agcaccgggc cggccctggg ggctgacagt 150
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caccgcccct actcccgggc tgccgcgcgc tccccgccc cagccctggc 400
atccagagta cgggtcgagc ccggggccatg gagccccct ggggaggcgg 450
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<210> 183

<211> 713

<212> PRT

<213> Homo sapiens

<400> 183

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Leu | Leu | Ala | Thr | Leu | Leu | Leu | Leu | Leu | Gly | Gly | Ala | Leu | 1 | 5 | 10 | 15 |
| Ala | His | Pro | Asp | Arg | Ile | Ile | Phe | Pro | Asn | His | Ala | Cys | Glu | Asp | 20 | 25 | 30 |
| Pro | Pro | Ala | Val | Leu | Leu | Glu | Val | Gln | Gly | Thr | Leu | Gln | Arg | Pro | 35 | 40 | 45 |
| Leu | Val | Arg | Asp | Ser | Arg | Thr | Ser | Pro | Ala | Asn | Cys | Thr | Trp | Leu | 50 | 55 | 60 |
| Ile | Leu | Gly | Ser | Lys | Glu | Gln | Thr | Val | Thr | Ile | Arg | Phe | Gln | Lys | 65 | 70 | 75 |
| Leu | His | Leu | Ala | Cys | Gly | Ser | Glu | Arg | Leu | Thr | Leu | Arg | Ser | Pro | 80 | 85 | 90 |
| Leu | Gln | Pro | Leu | Ile | Ser | Leu | Cys | Glu | Ala | Pro | Pro | Ser | Pro | Leu | 95 | 100 | 105 |
| Gln | Leu | Pro | Gly | Gly | Asn | Val | Thr | Ile | Thr | Tyr | Ser | Tyr | Ala | Gly | 110 | 115 | 120 |
| Ala | Arg | Ala | Pro | Met | Gly | Gln | Gly | Phe | Leu | Leu | Ser | Tyr | Ser | Gln | 125 | 130 | 135 |
| Asp | Trp | Leu | Met | Cys | Leu | Gln | Glu | Glu | Phe | Gln | Cys | Leu | Asn | His | 140 | 145 | 150 |
| Arg | Cys | Val | Ser | Ala | Val | Gln | Arg | Cys | Asp | Gly | Val | Asp | Ala | Cys | 155 | 160 | 165 |
| Gly | Asp | Gly | Ser | Asp | Glu | Ala | Gly | Cys | Ser | Ser | Asp | Pro | Phe | Pro | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gly | Leu | Thr | Pro | Arg 185 | Pro | Val | Pro | Ser | Leu | Pro | Cys | Asn | Val | Thr 195 |
| Leu | Glu | Asp | Phe | Tyr 200 | Gly | Val | Phe | Ser | Ser | Pro | Gly | Tyr | Thr | His 210 |
| Leu | Ala | Ser | Val | Ser 215 | His | Pro | Gln | Ser | Cys | His | Trp | Leu | Leu | Asp 225 |
| Pro | His | Asp | Gly | Arg 230 | Arg | Leu | Ala | Val | Arg | Phe | Thr | Ala | Leu | Asp 240 |
| Leu | Gly | Phe | Gly | Asp 245 | Ala | Val | His | Val | Tyr | Asp | Gly | Pro | Gly | Pro 255 |
| Pro | Glu | Ser | Ser | Arg 260 | Leu | Leu | Arg | Ser | Leu | Thr | His | Phe | Ser | Asn 270 |
| Gly | Lys | Ala | Val | Thr 275 | Val | Glu | Thr | Leu | Ser | Gly | Gln | Ala | Val | Val 285 |
| Ser | Tyr | His | Thr | Val 290 | Ala | Trp | Ser | Asn | Gly | Arg | Gly | Phe | Asn | Ala 300 |
| Thr | Tyr | His | Val | Arg 305 | Gly | Tyr | Cys | Leu | Pro | Trp | Asp | Arg | Pro | Cys 315 |
| Gly | Leu | Gly | Ser | Gly 320 | Leu | Gly | Ala | Gly | Glu | Gly | Leu | Gly | Glu | Arg 330 |
| Cys | Tyr | Ser | Glu | Ala 335 | Gln | Arg | Cys | Asp | Gly | Ser | Trp | Asp | Cys | Ala 345 |
| Asp | Gly | Thr | Asp | Glu 350 | Glu | Asp | Cys | Pro | Gly | Cys | Pro | Pro | Gly | His 360 |
| Phe | Pro | Cys | Gly | Ala 365 | Ala | Gly | Thr | Ser | Gly | Ala | Thr | Ala | Cys | Tyr 375 |
| Leu | Pro | Ala | Asp | Arg 380 | Cys | Asn | Tyr | Gln | Thr | Phe | Cys | Ala | Asp | Gly 390 |
| Ala | Asp | Glu | Arg | Arg 395 | Cys | Arg | His | Cys | Gln | Pro | Gly | Asn | Phe | Arg 405 |
| Cys | Arg | Asp | Glu | Lys 410 | Cys | Val | Tyr | Glu | Thr | Trp | Val | Cys | Asp | Gly 420 |
| Gln | Pro | Asp | Cys | Ala 425 | Asp | Gly | Ser | Asp | Glu | Trp | Asp | Cys | Ser | Tyr 435 |
| Val | Leu | Pro | Arg | Lys 440 | Val | Ile | Thr | Ala | Ala | Val | Ile | Gly | Ser | Leu 450 |
| Val | Cys | Gly | Leu | Leu 455 | Leu | Val | Ile | Ala | Leu | Gly | Cys | Thr | Cys | Lys 465 |

Leu Tyr Ala Ile Arg Thr Gln Glu Tyr Ser Ile Phe Ala Pro Leu
470 475 480

Ser Arg Met Glu Ala Glu Ile Val Gln Gln Gln Ala Pro Pro Ser
485 490 495

Tyr Gly Gln Leu Ile Ala Gln Gly Ala Ile Pro Pro Val Glu Asp
500 505 510

Phe Pro Thr Glu Asn Pro Asn Asp Asn Ser Val Leu Gly Asn Leu
515 520 525

Arg Ser Leu Leu Gln Ile Leu Arg Gln Asp Met Thr Pro Gly Gly
530 535 540

Gly Pro Gly Ala Arg Arg Arg Gln Arg Gly Arg Leu Met Arg Arg
545 550 555

Leu Val Arg Arg Leu Arg Arg Trp Gly Leu Leu Pro Arg Thr Asn
560 565 570

Thr Pro Ala Arg Ala Ser Glu Ala Arg Ser Gln Val Thr Pro Ser
575 580 585

Ala Ala Pro Leu Glu Ala Leu Asp Gly Gly Thr Gly Pro Ala Arg
590 595 600

Glu Gly Gly Ala Val Gly Gly Gln Asp Gly Glu Gln Ala Pro Pro
605 610 615

Leu Pro Ile Lys Ala Pro Leu Pro Ser Ala Ser Thr Ser Pro Ala
620 625 630

Pro Thr Thr Val Pro Glu Ala Pro Gly Pro Leu Pro Ser Leu Pro
635 640 645

Leu Glu Pro Ser Leu Leu Ser Gly Val Val Gln Ala Leu Arg Gly
650 655 660

Arg Leu Leu Pro Ser Leu Gly Pro Pro Gly Pro Thr Arg Ser Pro
665 670 675

Pro Gly Pro His Thr Ala Val Leu Ala Leu Glu Asp Glu Asp Asp
680 685 690

Val Leu Leu Val Pro Leu Ala Glu Pro Gly Val Trp Val Ala Glu
695 700 705

Ala Glu Asp Glu Pro Leu Leu Thr
710

<210> 184

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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 tgcggctggc actaactgtg acatctatga ccttttttat catcgacaaa 250
 gcccctgaac catatattgt tatcactgga tttgaagtca ccgttatctt 300
 atttttcata cttttatattg tactcagact tgatcgatta atgaagtggg 350
 tattttggcc tttgcttgat attatcaact cactggtaac aacagtattc 400
 atgctcatcg tatctgtgtt ggcaactgata ccagaaacca caacattgac 450
 agttgggtgga ggggtgtttg cacttgtgac agcagtatgc tgtcttgccg 500
 acggggccct tatttaccgg aagcttctgt tcaatcccag cggtccttac 550
 cagaaaaagc ctgtgcatga aaaaaaagaa gttttgtaat tttatattac 600
 tttttagttt gataactaagt attaaacata tttctgtatt cttccaaaaa 650
 aaaaaaaaaa aaa 663

<210> 190

<211> 152

<212> PRT

<213> Homo sapiens

<400> 190

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Asn | Val | Gln | Pro | Lys | Ile | Lys | His | Arg | Pro | Phe | Cys | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Val | Lys | Gly | His | Val | Lys | Met | Leu | Arg | Leu | Ala | Leu | Thr | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Ser | Met | Thr | Phe | Phe | Ile | Ile | Ala | Gln | Ala | Pro | Glu | Pro | Tyr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ile | Val | Ile | Thr | Gly | Phe | Glu | Val | Thr | Val | Ile | Leu | Phe | Phe | Ile |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Leu | Tyr | Val | Leu | Arg | Leu | Asp | Arg | Leu | Met | Lys | Trp | Leu | Phe |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Trp | Pro | Leu | Leu | Asp | Ile | Ile | Asn | Ser | Leu | Val | Thr | Thr | Val | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Met | Leu | Ile | Val | Ser | Val | Leu | Ala | Leu | Ile | Pro | Glu | Thr | Thr | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Thr | Val | Gly | Gly | Gly | Val | Phe | Ala | Leu | Val | Thr | Ala | Val | Cys |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Cys | Leu | Ala | Asp | Gly | Ala | Leu | Ile | Tyr | Arg | Lys | Leu | Leu | Phe | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Pro | Ser | Gly | Pro | Tyr | Gln | Lys | Lys | Pro | Val | His | Glu | Lys | Lys | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |

Val Leu

<210> 191
<211> 495
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 78, 212, 234, 487
<223> unknown base

<400> 191
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ctgctgctgg gtctgcagac gcgatggata acgtgcagcc gaaaataaaa 150
catcgcccct tctgcttcag tgtgaaaggc cacgtgaaga tgctgcggct 200
ggcactaact gngacatcta tgaccttttt tatnatcgca caagcccctg 250
aaccatatat tgttatcact ggatttgaag tcaccgttat cttatttttc 300
atacttttat atgtactcag acttgatcga ttaatgaagt ggttattttg 350
gcctttgctt gatattatca actcactggt aacaacagta ttcatgctca 400
tcgtatctgt gttggcactg ataccagaaa ccacaacatt gacagttggt 450
ggagggtgtg ttgcacttgt gacagcagta tgctgtnttg ccgac 495

<210> 192
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 192
cgttttgcag aacctactca ggcag 25

<210> 193
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 193
cctccaccaa ctgtcaatgt tgtgg 25

<210> 194
<211> 40

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 aaataattaa aaaaaaact tcattctaa 1879

<210> 196
 <211> 518
 <212> PRT
 <213> Homo sapien

<400> 196
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 Trp Leu Leu Arg Ala Ala Pro Glu Leu Ala Pro Ala Pro Phe Thr
 20 25 30
 Leu Pro Leu Arg Val Ala Ala Ala Thr Asn Arg Val Val Ala Pro
 35 40 45
 Thr Pro Gly Pro Gly Thr Pro Ala Glu Arg His Ala Asp Gly Leu
 50 55 60
 Ala Leu Ala Leu Glu Pro Ala Leu Ala Ser Pro Ala Gly Ala Ala
 65 70 75
 Asn Phe Leu Ala Met Val Asp Asn Leu Gln Gly Asp Ser Gly Arg
 80 85 90
 Gly Tyr Tyr Leu Glu Met Leu Ile Gly Thr Pro Pro Gln Lys Leu
 95 100 105

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 395 | | 400 | | 405 |
| Val Ile Gly Ala | Thr Val Met Glu Gly | Phe Tyr Val Ile Phe | Asp | | |
| | 410 | | 415 | | 420 |
| Arg Ala Gln Lys | Arg Val Gly Phe Ala | Ala Ser Pro Cys Ala | Glu | | |
| | 425 | | 430 | | 435 |
| Ile Ala Gly Ala | Ala Val Ser Glu Ile | Ser Gly Pro Phe Ser | Thr | | |
| | 440 | | 445 | | 450 |
| Glu Asp Val Ala | Ser Asn Cys Val Pro | Ala Gln Ser Leu Ser | Glu | | |
| | 455 | | 460 | | 465 |
| Pro Ile Leu Trp | Ile Val Ser Tyr Ala | Leu Met Ser Val Cys | Gly | | |
| | 470 | | 475 | | 480 |
| Ala Ile Leu Leu | Val Leu Ile Val Leu | Leu Leu Leu Pro Phe | Arg | | |
| | 485 | | 490 | | 495 |
| Cys Gln Arg Arg | Pro Arg Asp Pro Glu | Val Val Asn Asp Glu | Ser | | |
| | 500 | | 505 | | 510 |
| Ser Leu Val Arg | His Arg Trp Lys | | | | |
| | 515 | | | | |

<210> 197
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 197
 cgcagaagct acagattctc g 21

<210> 198
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 198
 ggaaattgga ggccaaagc 19

<210> 199
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 199
 ggatgtagcc agcaactgtg 20

<210> 200
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 200
gccttggtc gttctcttc 19

<210> 201
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 201
ggcctgtgc ctggatgg 18

<210> 202
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 202
gacaagacta cctccgttg tc 22

<210> 203
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 203
tgatgcacag ttcagcacct gttg 24

<210> 204
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 204
cgctccaagg gctttgacgt cacagtgaag tacacacaag gaagctg 47

<210> 205
<211> 1939
<212> DNA

<213> Homo sapiens

<400> 205

cgccctccgcc ttccggaggct gacgcgcccg ggccgcttc caggcctgtg 50
cagggcggat cggcagccgc ctggcgggca tccagggcgg tgcggggcct 100
gggcgggagc cgggaggcgc ggccggcatg gaggcgctgc tgctgggcgc 150
ggggttgctg ctgggcgctt acgtgcttgt ctactacaac ctggtgaagg 200
ccccgccgtg cggcggcatg ggcaacctgc ggggccgcac ggccgtggtc 250
acgggcgcca acagcggcat cggaaagatg acggcgctgg agctggcgcg 300
ccggggagcg cgcgtggtgc tggcctgccg cagccaggag cgcggggagg 350
cggctgcctt cgacctccgc caggagagtg ggaacaatga ggtcatcttc 400
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ggggacgtct tgacttcaaa cgccctggacc gcccagtggg gggctggcgg 700
caggagctgc gggcatatgc tgacactaag ctggctaata tactgtttgc 750
ccgggagctc gccaaccagc ttgaggccac tggcgtcacc tgctatgcag 800
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 cagggcaggg cagctggtat cgaggtgcc catgggagta aggggacgcc 1850
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 taaagcgcgt tgaccgcca aaaaaaaaaa aaaaaaaaaa 1939

<210> 206
 <211> 377
 <212> PRT
 <213> Homo sapiens

<400> 206
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 Val Leu Val Tyr Tyr Asn Leu Val Lys Ala Pro Pro Cys Gly Gly
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 Met Gly Asn Leu Arg Gly Arg Thr Ala Val Val Thr Gly Ala Asn
 35 40 45
 Ser Gly Ile Gly Lys Met Thr Ala Leu Glu Leu Ala Arg Arg Gly
 50 55 60
 Ala Arg Val Val Leu Ala Cys Arg Ser Gln Glu Arg Gly Glu Ala
 65 70 75
 Ala Ala Phe Asp Leu Arg Gln Glu Ser Gly Asn Asn Glu Val Ile
 80 85 90
 Phe Met Ala Leu Asp Leu Ala Ser Leu Ala Ser Val Arg Ala Phe
 95 100 105
 Ala Thr Ala Phe Leu Ser Ser Glu Pro Arg Leu Asp Ile Leu Ile
 110 115 120
 His Asn Ala Gly Ile Ser Ser Cys Gly Arg Thr Arg Glu Ala Phe
 125 130 135
 Asn Leu Leu Leu Arg Val Asn His Ile Gly Pro Phe Leu Leu Thr
 140 145 150

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| His | Leu | Leu | Leu | Pro | Cys | Leu | Lys | Ala | Cys | Ala | Pro | Ser | Arg | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Val | Val | Val | Ala | Ser | Ala | Ala | His | Cys | Arg | Gly | Arg | Leu | Asp | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Arg | Leu | Asp | Arg | Pro | Val | Val | Gly | Trp | Arg | Gln | Glu | Leu | Arg | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Tyr | Ala | Asp | Thr | Lys | Leu | Ala | Asn | Val | Leu | Phe | Ala | Arg | Glu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Leu | Ala | Asn | Gln | Leu | Glu | Ala | Thr | Gly | Val | Thr | Cys | Tyr | Ala | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| His | Pro | Gly | Pro | Val | Asn | Ser | Glu | Leu | Phe | Leu | Arg | His | Val | Pro | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Gly | Trp | Leu | Arg | Pro | Leu | Leu | Arg | Pro | Leu | Ala | Trp | Leu | Val | Leu | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Arg | Ala | Pro | Arg | Gly | Gly | Ala | Gln | Thr | Pro | Leu | Tyr | Cys | Ala | Leu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gln | Glu | Gly | Ile | Glu | Pro | Leu | Ser | Gly | Arg | Tyr | Phe | Ala | Asn | Cys | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| His | Val | Glu | Glu | Val | Pro | Pro | Ala | Ala | Arg | Asp | Asp | Arg | Ala | Ala | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| His | Arg | Leu | Trp | Glu | Ala | Ser | Lys | Arg | Leu | Ala | Gly | Leu | Gly | Pro | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Gly | Glu | Asp | Ala | Glu | Pro | Asp | Glu | Asp | Pro | Gln | Ser | Glu | Asp | Ser | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Glu | Ala | Pro | Ser | Ser | Leu | Ser | Thr | Pro | His | Pro | Glu | Glu | Pro | Thr | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Val | Ser | Gln | Pro | Tyr | Pro | Ser | Pro | Gln | Ser | Ser | Pro | Asp | Leu | Ser | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Lys | Met | Thr | His | Arg | Ile | Gln | Ala | Lys | Val | Glu | Pro | Glu | Ile | Gln | |
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Leu Ser

<210> 207
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 207
 cttcatggcc ttggacttgg ccag 24

<210> 208
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 208
acgccagtgg cctcaagctg gttg 24

<210> 209
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 209
ctttctgagc tctgagccac ggttgacat cctcatccac aatgc 45

<210> 210
<211> 3716
<212> DNA
<213> Homo sapiens

<400> 210
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acccccagga ccagctgttc cagggccctg gccctgccag gatgagctgc 150
caagcctcag gccagccacc tcccaccatc cgctgggttg tgaatgggca 200
gccctgagc atggtgcccc cagaccacaca ccacctcctg cctgatggga 250
cccttctgct gctacagccc cctgcccggg gacatgcca cgatggccag 300
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 cagcccagct tccagtgcgc tgtccagctc ctcaactgtca tccctggggg 2350
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aaaaaaaaaa aaaaaa 3716

<210> 211

<211> 985

<212> PRT

<213> Homo sapiens

<400> 211

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Pro Gln Asp Gln Leu Phe Gln Gly Pro Gly Pro Ala Arg Met Ser
20 25 30

Cys Gln Ala Ser Gly Gln Pro Pro Pro Thr Ile Arg Trp Leu Leu
35 40 45

Asn Gly Gln Pro Leu Ser Met Val Pro Pro Asp Pro His His Leu
50 55 60

Leu Pro Asp Gly Thr Leu Leu Leu Leu Gln Pro Pro Ala Arg Gly
65 70 75

His Ala His Asp Gly Gln Ala Leu Ser Thr Asp Leu Gly Val Tyr
80 85 90

Thr Cys Glu Ala Ser Asn Arg Leu Gly Thr Ala Val Ser Arg Gly
95 100 105

Ala Arg Leu Ser Val Ala Val Leu Arg Glu Asp Phe Gln Ile Gln
110 115 120

Pro Arg Asp Met Val Ala Val Val Gly Glu Gln Phe Thr Leu Glu
125 130 135

Cys Gly Pro Pro Trp Gly His Pro Glu Pro Thr Val Ser Trp Trp
140 145 150

Lys Asp Gly Lys Pro Leu Ala Leu Gln Pro Gly Arg His Thr Val
155 160 165

Ser Gly Gly Ser Leu Leu Met Ala Arg Ala Glu Lys Ser Asp Glu
170 175 180

Gly Thr Tyr Met Cys Val Ala Thr Asn Ser Ala Gly His Arg Glu
185 190 195

Ser Arg Ala Ala Arg Val Ser Ile Gln Glu Pro Gln Asp Tyr Thr
200 205 210

Glu Pro Val Glu Leu Leu Ala Val Arg Ile Gln Leu Glu Asn Val
215 220 225

Thr Leu Leu Asn Pro Asp Pro Ala Glu Gly Pro Lys Pro Arg Pro
230 235 240

| | | |
|---|-----|-----|
| 530 | 535 | 540 |
| Leu Ser Trp Asp Ser Arg Ser Pro Gly Val Pro Leu Leu Pro Asp | | |
| 545 | 550 | 555 |
| Thr Ser Thr Phe Tyr Gly Ser Leu Ile Ala Glu Leu Pro Ser Ser | | |
| 560 | 565 | 570 |
| Thr Pro Ala Arg Pro Ser Pro Gln Val Pro Ala Val Arg Arg Leu | | |
| 575 | 580 | 585 |
| Pro Pro Gln Leu Ala Gln Leu Ser Ser Pro Cys Ser Ser Ser Asp | | |
| 590 | 595 | 600 |
| Ser Leu Cys Ser Arg Arg Gly Leu Ser Ser Pro Arg Leu Ser Leu | | |
| 605 | 610 | 615 |
| Ala Pro Ala Glu Ala Trp Lys Ala Lys Lys Lys Gln Glu Leu Gln | | |
| 620 | 625 | 630 |
| His Ala Asn Ser Ser Pro Leu Leu Arg Gly Ser His Ser Leu Glu | | |
| 635 | 640 | 645 |
| Leu Arg Ala Cys Glu Leu Gly Asn Arg Gly Ser Lys Asn Leu Ser | | |
| 650 | 655 | 660 |
| Gln Ser Pro Gly Ala Val Pro Gln Ala Leu Val Ala Trp Arg Ala | | |
| 665 | 670 | 675 |
| Leu Gly Pro Lys Leu Leu Ser Ser Ser Asn Glu Leu Val Thr Arg | | |
| 680 | 685 | 690 |
| His Leu Pro Pro Ala Pro Leu Phe Pro His Glu Thr Pro Pro Thr | | |
| 695 | 700 | 705 |
| Gln Ser Gln Gln Thr Gln Pro Pro Val Ala Pro Gln Ala Pro Ser | | |
| 710 | 715 | 720 |
| Ser Ile Leu Leu Pro Ala Ala Pro Ile Pro Ile Leu Ser Pro Cys | | |
| 725 | 730 | 735 |
| Ser Pro Pro Ser Pro Gln Ala Ser Ser Leu Ser Gly Pro Ser Pro | | |
| 740 | 745 | 750 |
| Ala Ser Ser Arg Leu Ser Ser Ser Ser Leu Ser Ser Leu Gly Glu | | |
| 755 | 760 | 765 |
| Asp Gln Asp Ser Val Leu Thr Pro Glu Glu Val Ala Leu Cys Leu | | |
| 770 | 775 | 780 |
| Glu Leu Ser Glu Gly Glu Glu Thr Pro Arg Asn Ser Val Ser Pro | | |
| 785 | 790 | 795 |
| Met Pro Arg Ala Pro Ser Pro Pro Thr Thr Tyr Gly Tyr Ile Ser | | |
| 800 | 805 | 810 |
| Val Pro Thr Ala Ser Glu Phe Thr Asp Met Gly Arg Thr Gly Gly | | |
| 815 | 820 | 825 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Val | Gly | Pro | Lys | Gly | Gly | Val | Leu | Leu | Cys | Pro | Pro | Arg | Pro | 830 | 835 | 840 |
| Cys | Leu | Thr | Pro | Thr | Pro | Ser | Glu | Gly | Ser | Leu | Ala | Asn | Gly | Trp | 845 | 850 | 855 |
| Gly | Ser | Ala | Ser | Glu | Asp | Asn | Ala | Ala | Ser | Ala | Arg | Ala | Ser | Leu | 860 | 865 | 870 |
| Val | Ser | Ser | Ser | Asp | Gly | Ser | Phe | Leu | Ala | Asp | Ala | His | Phe | Ala | 875 | 880 | 885 |
| Arg | Ala | Leu | Ala | Val | Ala | Val | Asp | Ser | Phe | Gly | Phe | Gly | Leu | Glu | 890 | 895 | 900 |
| Pro | Arg | Glu | Ala | Asp | Cys | Val | Phe | Ile | Asp | Ala | Ser | Ser | Pro | Pro | 905 | 910 | 915 |
| Ser | Pro | Arg | Asp | Glu | Ile | Phe | Leu | Thr | Pro | Asn | Leu | Ser | Leu | Pro | 920 | 925 | 930 |
| Leu | Trp | Glu | Trp | Arg | Pro | Asp | Trp | Leu | Glu | Asp | Met | Glu | Val | Ser | 935 | 940 | 945 |
| His | Thr | Gln | Arg | Leu | Gly | Arg | Gly | Met | Pro | Pro | Trp | Pro | Pro | Asp | 950 | 955 | 960 |
| Ser | Gln | Ile | Ser | Ser | Gln | Arg | Ser | Gln | Leu | His | Cys | Arg | Met | Pro | 965 | 970 | 975 |
| Lys | Ala | Gly | Ala | Ser | Pro | Val | Asp | Tyr | Ser | | | | | | 980 | 985 | |

<210> 212

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 212

gaaggacct acatgtgtgt ggcc 24

<210> 213

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 213

actgaccttc cagctgagcc acac 24

<210> 214

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 214

aggactacac ggagcctgtg gagcttctgg ctgtgcgaat tcagctggaa 50

<210> 215

<211> 2749

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 1869, 1887

<223> unknown base

<400> 215

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ttgcctgctg ctcccaggtt atgaagccct ggagggccca gaggaaatca 100

gcgggttcga aggggacact gtgtccctgc agtgcaccta cagggaagag 150

ctgagggacc accggaagta ctggtgcagg aagggtggga tcctcttctc 200

tcgctgctct ggcaccatct atgcagaaga agaaggccag gagacaatga 250

agggcaggggt gtccatccgt gacagccgcc aggagctctc gctcattgtg 300

accctgtgga acctcaccct gcaagacgct ggggagtact ggtgtgggggt 350

cgaaaaacgg ggccccgatg agtcttttact gatctctctg ttctgtcttc 400

caggaccctg ctgtctctcc tccccttctc ccaccttcca gcctctggct 450

acaacacgcc tgcagcccaa ggcaaaagct cagcaaacc agcccccagg 500

attgaattct cctgggctct acccggcagc caccacagcc aagcagggga 550

agacaggggc tgaggcccct ccattgccag ggacttccca gtacgggcac 600

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tcctgcaggg agtcccgc ccccatgca gctggactcc acctcagcag 700

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<211> 332
<212> PRT
<213> Homo sapiens

<400> 216
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Tyr Glu Ala Leu Glu Gly Pro Glu Glu Ile Ser Gly Phe Glu Gly
20 25 30
Asp Thr Val Ser Leu Gln Cys Thr Tyr Arg Glu Glu Leu Arg Asp
35 40 45
His Arg Lys Tyr Trp Cys Arg Lys Gly Gly Ile Leu Phe Ser Arg
50 55 60
Cys Ser Gly Thr Ile Tyr Ala Glu Glu Gly Gln Glu Thr Met
65 70 75
Lys Gly Arg Val Ser Ile Arg Asp Ser Arg Gln Glu Leu Ser Leu
80 85 90
Ile Val Thr Leu Trp Asn Leu Thr Leu Gln Asp Ala Gly Glu Tyr
95 100 105
Trp Cys Gly Val Glu Lys Arg Gly Pro Asp Glu Ser Leu Leu Ile
110 115 120
Ser Leu Phe Val Phe Pro Gly Pro Cys Cys Pro Pro Ser Pro Ser
125 130 135
Pro Thr Phe Gln Pro Leu Ala Thr Thr Arg Leu Gln Pro Lys Ala
140 145 150
Lys Ala Gln Gln Thr Gln Pro Pro Gly Leu Thr Ser Pro Gly Leu
155 160 165
Tyr Pro Ala Ala Thr Thr Ala Lys Gln Gly Lys Thr Gly Ala Glu
170 175 180
Ala Pro Pro Leu Pro Gly Thr Ser Gln Tyr Gly His Glu Arg Thr
185 190 195
Ser Gln Tyr Thr Gly Thr Ser Pro His Pro Ala Thr Ser Pro Pro

<400> 219
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<210> 220
 <211> 950
 <212> DNA
 <213> Homo sapiens

<400> 220
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 cagtgtgaaa gaaccagtgg tctcgctctg ttgcccaggc tagagtgtac 150
 tggcgtgatc atagctcact gcagcctcag actcctggac ttgagaaatc 200
 ctcttgccctt agcctcctgc atatctggga ctccaggggt gcactcaagc 250
 cctgtttctt ctcttctgt gagtggacca cggaggctgg tgagctgcct 300
 gtcaccccaa agctcagctc tgagccagag tgggtggtggc tccacctctg 350
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 gctgggatca tgttgttggc cctggtctgt ctgctcagct gcctgctacc 450
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 cctaggcttg ggaagacaag ccagcgaata aaggatggtt gaacgtgaaa 950

<210> 221
 <211> 146
 <212> PRT
 <213> Homo sapiens

<400> 221
 Met Leu Leu Ala Leu Val Cys Leu Leu Ser Cys Leu Leu Pro Ser
 1 5 10 15
 Ser Glu Ala Lys Leu Tyr Gly Arg Cys Glu Leu Ala Arg Val Leu
 20 25 30

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Asp | Phe | Gly | Leu | Asp | Gly | Tyr | Arg | Gly | Tyr | Ser | Leu | Ala | Asp | 35 | 40 | 45 |
| Trp | Val | Cys | Leu | Ala | Tyr | Phe | Thr | Ser | Gly | Phe | Asn | Ala | Ala | Ala | 50 | 55 | 60 |
| Leu | Asp | Tyr | Glu | Ala | Asp | Gly | Ser | Thr | Asn | Asn | Gly | Ile | Phe | Gln | 65 | 70 | 75 |
| Ile | Asn | Ser | Arg | Arg | Trp | Cys | Ser | Asn | Leu | Thr | Pro | Asn | Val | Pro | 80 | 85 | 90 |
| Asn | Val | Cys | Arg | Met | Tyr | Cys | Ser | Asp | Leu | Leu | Asn | Pro | Asn | Leu | 95 | 100 | 105 |
| Lys | Asp | Thr | Val | Ile | Cys | Ala | Met | Lys | Ile | Thr | Gln | Glu | Pro | Gln | 110 | 115 | 120 |
| Gly | Leu | Gly | Tyr | Trp | Glu | Ala | Trp | Arg | His | His | Cys | Gln | Gly | Lys | 125 | 130 | 135 |
| Asp | Leu | Thr | Glu | Trp | Val | Asp | Gly | Cys | Asp | Phe | | | | | 140 | 145 | |

<210> 222
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 222
 gggatcatgt tggtagccct ggtc 24

<210> 223
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 223
 gcaaggcaga cccagtcagc cag 23

<210> 224
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 224
 ctgcctgcta ccctccaagt gaggccaagc tctacggtcg ttgtg 45

<210> 225

<211> 2049
<212> DNA
<213> Homo sapiens

<400> 225

agccgctgcc ccgggccggg cgcccgggc ggcacatga gtccccgctc 50
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cgagcaactg gctgtacctg gccaaagtgt cgtcgggtggg gagcatctca 150
gaggaggaga cgtgcgagaa actcaagggc ctgatccaga ggcaggtgca 200
gatgtgcaag cggaacctgg aagtcattga ctcggtgcgc cgcggtgccc 250
agctggccat tgaggagtgc cagtaccagt tccggaaccg gcgctggaac 300
tgctccacac tcgactcctt gcccgcttc ggcaaggtgg tgacgcaagg 350
gactcgggag gcggccttcg tgtacgcat ctcttcggca ggtgtggcct 400
ttgcagtgc gcggcgctgc agcagtggg agctggagaa gtgcggctgt 450
gacaggacag tgcatggggc cagccacag ggcttcagt ggtcaggatg 500
ctctgacaac atcgctacg gtgtggcctt ctacagtcg tttgtggatg 550
tgccggagag aagcaagggg gcctcgtcca gcagagccct catgaacctc 600
cacaacaatg aggccggcag gaaggccatc ctgacacaca tgcgggtgga 650
atgcaagtgc cacggggtgt caggctcctg tgaggtaaag acgtgctggc 700
gagccgtgcc gcccttcgc cagggtgggtc acgcactgaa ggagaagttt 750
gatggtgcca ctgagggtga gccacgcgc gtgggctcct ccagggcact 800
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acttgagacc tagccccgac ttctgtgagc aggacatgcg cagcggcgtg 900
ctgggcacga ggggccgcac atgcaacaag acgtccaagg ccatcgacgg 950
ctgtgagctg ctgtgctgtg gcgcgggctt ccacacggcg cagggtggagc 1000
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aaacagtctc ccaccacctc cccaagaga tactggttgt attttttgtt 1200
ctggttttgt ttttgggtcc tcatgttatt tattgccga accaggcagg 1250
caacccaag ggcaccaacc agggcctccc caaagcctgg gcctttgtgg 1300
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gctgccactg accactcagt tggtatctgt gtccgttttt ctacttgcag 1400
 acctaagggtg gagtaacaag gagtattacc accacatggc tactgaccgt 1450
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 atggaagtca caccctctgg aaaaaagaac tottaactct ccagcacaca 1550
 tacacatgga ctccctggcag cttgagccta gaagccatgt ctctcaaagt 1600
 ccctgagaaa gggaacaagc agataccagg tcaagggcac cagggttcatt 1650
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 agaccacact aggcaggcat ataggctgcc atoctggacc agggatcccc 1850
 gctgtgcctt tgcagtcatg cccgagtcac ctttcacagc gctgttcctc 1900
 catgaaactg aaaaacacac acacacacac acacacacac acacacacac 1950
 acacacacac ggacacacac acacacctgc gagagagagg gaggaaaggg 2000
 ctgtgccttt gcagtcatgc ccgagtcacc tttcacagca ctgttcctc 2049

<210> 226

<211> 351

<212> PRT

<213> Homo sapiens

<400> 226

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ser | Pro | Arg | Ser | Cys | Leu | Arg | Ser | Leu | Arg | Leu | Leu | Val | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Val | Phe | Ser | Ala | Ala | Ala | Ser | Asn | Trp | Leu | Tyr | Leu | Ala | Lys |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Ser | Ser | Val | Gly | Ser | Ile | Ser | Glu | Glu | Glu | Thr | Cys | Glu | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Lys | Gly | Leu | Ile | Gln | Arg | Gln | Val | Gln | Met | Cys | Lys | Arg | Asn |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Glu | Val | Met | Asp | Ser | Val | Arg | Arg | Gly | Ala | Gln | Leu | Ala | Ile |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Glu | Glu | Cys | Gln | Tyr | Gln | Phe | Arg | Asn | Arg | Arg | Trp | Asn | Cys | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Thr | Leu | Asp | Ser | Leu | Pro | Val | Phe | Gly | Lys | Val | Val | Thr | Gln | Gly |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Thr | Arg | Glu | Ala | Ala | Phe | Val | Tyr | Ala | Ile | Ser | Ser | Ala | Gly | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Phe | Ala | Val | Thr | Arg | Ala | Cys | Ser | Ser | Gly | Glu | Leu | Glu | Lys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Cys | Gly | Cys | Asp | Arg | Thr | Val | His | Gly | Val | Ser | Pro | Gln | Gly | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Gln | Trp | Ser | Gly | Cys | Ser | Asp | Asn | Ile | Ala | Tyr | Gly | Val | Ala | Phe |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ser | Gln | Ser | Phe | Val | Asp | Val | Arg | Glu | Arg | Ser | Lys | Gly | Ala | Ser |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ser | Ser | Arg | Ala | Leu | Met | Asn | Leu | His | Asn | Asn | Glu | Ala | Gly | Arg |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Lys | Ala | Ile | Leu | Thr | His | Met | Arg | Val | Glu | Cys | Lys | Cys | His | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Val | Ser | Gly | Ser | Cys | Glu | Val | Lys | Thr | Cys | Trp | Arg | Ala | Val | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Pro | Phe | Arg | Gln | Val | Gly | His | Ala | Leu | Lys | Glu | Lys | Phe | Asp | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Thr | Glu | Val | Glu | Pro | Arg | Arg | Val | Gly | Ser | Ser | Arg | Ala | Leu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Val | Pro | Arg | Asn | Ala | Gln | Phe | Lys | Pro | His | Thr | Asp | Glu | Asp | Leu |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Val | Tyr | Leu | Glu | Pro | Ser | Pro | Asp | Phe | Cys | Glu | Gln | Asp | Met | Arg |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Ser | Gly | Val | Leu | Gly | Thr | Arg | Gly | Arg | Thr | Cys | Asn | Lys | Thr | Ser |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Lys | Ala | Ile | Asp | Gly | Cys | Glu | Leu | Leu | Cys | Cys | Gly | Arg | Gly | Phe |
| | | | | 305 | | | | | 310 | | | | | 315 |
| His | Thr | Ala | Gln | Val | Glu | Leu | Ala | Glu | Arg | Cys | Ser | Cys | Lys | Phe |
| | | | | 320 | | | | | 325 | | | | | 330 |
| His | Trp | Cys | Cys | Phe | Val | Lys | Cys | Arg | Gln | Cys | Gln | Arg | Leu | Val |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Glu | Leu | His | Thr | Cys | Arg | | | | | | | | | |
| | | | | 350 | | | | | | | | | | |

<210> 227

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 227

gctgcagctg caaattccac tgg 23

<210> 228
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 228
tggtgggaga ctgtttaaat tatcgcc 28

<210> 229
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 229
tgcttcgtca agtgccggca gtgccagcgg ctctggagt t 41

<210> 230
<211> 1355
<212> DNA
<213> Homo sapiens

<400> 230
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gggtgcctgc atcgccatgg acaccaccag gtacagcaag tggggcggca 100
gctccgagga ggtccccgga gggccctggg gacgctgggt gcaactggagc 150
aggagacccc tcttcttggc cctggctgtc ctggtcacca cagtcctttg 200
ggctgtgatt ctgagtatcc tattgtccaa ggccctccacg gagcgcgcg 250
cgctgcttga cggccacgac ctgctgagga caaacgcctc gaagcagacg 300
gcggcgctgg gtgccctgaa ggaggaggtc ggagactgcc acagctgctg 350
ctcggggacg caggcgcagc tgcagaccac gcgcgcggag cttggggagg 400
cgcaggcgaa gctgatggag caggagagcg ccctgcggga actgcgtgag 450
cgcgtgaccc agggcttggc tgaagccggc aggggccgtg aggacgtccg 500
cactgagctg ttccgggcgc tggaggccgt gaggctccag aacaactcct 550
gcgagccgtg cccacgctcg tggctgtcct tcgagggtc ctgctacttt 600
ttctctgtgc caaagaogac gtgggcggcg gcgcaggatc actgcgcaga 650
tgccagcgcg cacctggtga tcgttggggg cctggatgag cagggttcc 700
tcaactcgaa cacgcgtggc cgtgggttact ggctgggcct gagggctgtg 750

cgccatctgg gcaaggttca gggctaccag tgggtggacg gagtctctct 800
 cagcttcagc cactggaacc agggagagcc caatgacgct tgggggcgcg 850
 agaactgtgt catgatgctg cacacggggc tgtggaacga cgcaccgtgt 900
 gagagcgaga aggacggctg gatctgtgag aaaaggcaca actgctgacc 950
 ccgcccagtg ccctggagcc gcgcccattg cagcatgtcg tctcctgggg 1000
 gctgctcacc tccctggctc ctggagctga ttgccaaaga gtttttttct 1050
 tcctcatcca ccgctgctga gtctcagaaa cacttgggcc aacatagccc 1100
 tgtccagccc agtgccctggg ctctggggacc tccatgccga cctcatccta 1150
 actccactca cgagaccca acctaacctc cactagctcc aaaatccctg 1200
 ctctgcgctc cccgtgatat gcctccactt ctctccctaa ccaagggttag 1250
 gtgactgagg actggagctg tttggttttc tcgcattttc caccaaactg 1300
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 aaaaa 1355

<210> 231

<211> 293

<212> PRT

<213> Homo sapiens

<400> 231

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Asp | Thr | Thr | Arg | Tyr | Ser | Lys | Trp | Gly | Gly | Ser | Ser | Glu | Glu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Pro | Gly | Gly | Pro | Trp | Gly | Arg | Trp | Val | His | Trp | Ser | Arg | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Leu | Phe | Leu | Ala | Leu | Ala | Val | Leu | Val | Thr | Thr | Val | Leu | Trp |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Ile | Leu | Ser | Ile | Leu | Leu | Ser | Lys | Ala | Ser | Thr | Glu | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ala | Leu | Leu | Asp | Gly | His | Asp | Leu | Leu | Arg | Thr | Asn | Ala | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Gln | Thr | Ala | Ala | Leu | Gly | Ala | Leu | Lys | Glu | Glu | Val | Gly | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | His | Ser | Cys | Cys | Ser | Gly | Thr | Gln | Ala | Gln | Leu | Gln | Thr | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ala | Glu | Leu | Gly | Glu | Ala | Gln | Ala | Lys | Leu | Met | Glu | Gln | Glu |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Leu | Arg | Glu | Leu | Arg | Glu | Arg | Val | Thr | Gln | Gly | Leu | Ala |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Glu | Ala | Gly | Arg | Gly | Arg | Glu | Asp | Val | Arg | Thr | Glu | Leu | Phe | Arg | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ala | Leu | Glu | Ala | Val | Arg | Leu | Gln | Asn | Asn | Ser | Cys | Glu | Pro | Cys | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Pro | Thr | Ser | Trp | Leu | Ser | Phe | Glu | Gly | Ser | Cys | Tyr | Phe | Phe | Ser | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Val | Pro | Lys | Thr | Thr | Trp | Ala | Ala | Ala | Gln | Asp | His | Cys | Ala | Asp | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Ser | Ala | His | Leu | Val | Ile | Val | Gly | Gly | Leu | Asp | Glu | Gln | Gly | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Phe | Leu | Thr | Arg | Asn | Thr | Arg | Gly | Arg | Gly | Tyr | Trp | Leu | Gly | Leu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Arg | Ala | Val | Arg | His | Leu | Gly | Lys | Val | Gln | Gly | Tyr | Gln | Trp | Val | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Asp | Gly | Val | Ser | Leu | Ser | Phe | Ser | His | Trp | Asn | Gln | Gly | Glu | Pro | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Asn | Asp | Ala | Trp | Gly | Arg | Glu | Asn | Cys | Val | Met | Met | Leu | His | Thr | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Gly | Leu | Trp | Asn | Asp | Ala | Pro | Cys | Asp | Ser | Glu | Lys | Asp | Gly | Trp | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Ile | Cys | Glu | Lys | Arg | His | Asn | Cys | | | | | | | | |
| | | | | 290 | | | | | | | | | | | |

<210> 232
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 232
 gcgagaactg tgatcatgatg ctgc 24

<210> 233
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 233
 gtttctgaga ctcagcagcg gtgg 24

<210> 234
 <211> 50
 <212> DNA

tggactgcga ggtctccctg tggctcgtcct ggggactgtg cggaggccac 1150
 tgtgggagggc tcgggaccaa gagcaggact cgctacgtcc ggggccagcc 1200
 cgccaacaac gggagcccct gccccgagct cgaagaagag gctgagtgcg 1250
 tccctgataa ctgctgctaa gaccagagcc ccgcagcccc tggggccccc 1300
 cggagccatg ggggtgtcggg ggctcctgtg caggctcatg ctgcaggcgg 1350
 ccgagggcac aggggggttc gcgctgtcc tgaccgcggt gaggccgcgc 1400
 cgaccatctc tgcactgaag ggccctctgg tggccggcac gggcattggg 1450
 aaacagcctc ctctttccc aaccttgctt cttagggggc cccgtgtccc 1500
 gtctgtctc agcctcctcc tctgcagga taaagtcac cccaaggctc 1550
 cagctactct aaattatgtc tccttataag ttattgctgc tccaggagat 1600
 tgtccttcat cgtccagggg cctggctccc acgtggttgc agatacctca 1650
 gacctggtgc tctaggctgt gctgagccca ctctcccgag ggcgcatcca 1700
 agcggggggc acttgagaag tgaataaatg gggcggtttc ggaagcgtca 1750
 gtgtttccat gttatggatc tctctgcgtt tgaataaaga ctatctctgt 1800
 tgctcacaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 1847

<210> 236

<211> 331

<212> PRT

<213> Homo sapiens

<400> 236

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Asn | Pro | Ser | Pro | Ala | Ala | Ala | Leu | Gly | Lys | Ala | Leu | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Leu | Leu | Leu | Ala | Thr | Leu | Gly | Ala | Ala | Gly | Gln | Pro | Leu | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Glu | Ser | Ile | Cys | Ser | Ala | Arg | Ala | Pro | Ala | Lys | Tyr | Ser | Ile |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Phe | Thr | Gly | Lys | Trp | Ser | Gln | Thr | Ala | Phe | Pro | Lys | Gln | Tyr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Leu | Phe | Arg | Pro | Pro | Ala | Gln | Trp | Ser | Ser | Leu | Leu | Gly | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ala | His | Ser | Ser | Asp | Tyr | Ser | Met | Trp | Arg | Lys | Asn | Gln | Tyr | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Asn | Gly | Leu | Arg | Asp | Phe | Ala | Glu | Arg | Gly | Glu | Ala | Trp | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Met | Lys | Glu | Ile | Glu | Ala | Ala | Gly | Glu | Ala | Leu | Gln | Ser | Val |

| | | |
|-------------------------------------|-------------------------|-----|
| 110 | 115 | 120 |
| His Glu Val Phe Ser Ala Pro Ala Val | Pro Ser Gly Thr Gly Gln | |
| 125 | 130 | 135 |
| Thr Ser Ala Glu Leu Glu Val Gln Arg | Arg His Ser Leu Val Ser | |
| 140 | 145 | 150 |
| Phe Val Val Arg Ile Val Pro Ser Pro | Asp Trp Phe Val Gly Val | |
| 155 | 160 | 165 |
| Asp Ser Leu Asp Leu Cys Asp Gly Asp | Arg Trp Arg Glu Gln Ala | |
| 170 | 175 | 180 |
| Ala Leu Asp Leu Tyr Pro Tyr Asp Ala | Gly Thr Asp Ser Gly Phe | |
| 185 | 190 | 195 |
| Thr Phe Ser Ser Pro Asn Phe Ala Thr | Ile Pro Gln Asp Thr Val | |
| 200 | 205 | 210 |
| Thr Glu Ile Thr Ser Ser Ser Pro Ser | His Pro Ala Asn Ser Phe | |
| 215 | 220 | 225 |
| Tyr Tyr Pro Arg Leu Lys Ala Leu Pro | Pro Ile Ala Arg Val Thr | |
| 230 | 235 | 240 |
| Leu Leu Arg Leu Arg Gln Ser Pro Arg | Ala Phe Ile Pro Pro Ala | |
| 245 | 250 | 255 |
| Pro Val Leu Pro Ser Arg Asp Asn Glu | Ile Val Asp Ser Ala Ser | |
| 260 | 265 | 270 |
| Val Pro Glu Thr Pro Leu Asp Cys Glu | Val Ser Leu Trp Ser Ser | |
| 275 | 280 | 285 |
| Trp Gly Leu Cys Gly Gly His Cys Gly | Arg Leu Gly Thr Lys Ser | |
| 290 | 295 | 300 |
| Arg Thr Arg Tyr Val Arg Val Gln Pro | Ala Asn Asn Gly Ser Pro | |
| 305 | 310 | 315 |
| Cys Pro Glu Leu Glu Glu Glu Ala Glu | Cys Val Pro Asp Asn Cys | |
| 320 | 325 | 330 |

Val

<210> 237

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 237

cagcactgcc aggggaagag gg 22

<210> 238
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 238
 caggactcgc tacgtccg 18

 <210> 239
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 239
 cagcccccttc tcctcctttc tccc 24

 <210> 240
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 240
 gcagttatca gggacgcact cagcc 25

 <210> 241
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 241
 ccagcgagag gcagatag 18

 <210> 242
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 242
 cggtcaccgt gtcctgcggg atg 23

 <210> 243
 <211> 42
 <212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 243

cagccccttc tcctcctttc tcccacgtcc tatctgcctc tc 42

<210> 244

<211> 1894

<212> DNA

<213> Homo sapiens

<400> 244

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| | 410 | 415 | 420 | | |
| Ser His Val Leu | Gln Phe Glu Asp Lys | Ser Arg Lys Val Lys | Asp | | |
| | 425 | 430 | 435 | | |
| Ala Ser Met Gln | Asp Ser Asp Thr Phe | Glu Ile Tyr Asp Pro | Arg | | |
| | 440 | 445 | 450 | | |
| Asn Pro Val Asn | Lys Arg Arg Arg Glu | Glu Ser Lys Lys Leu | Met | | |
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 <212> DNA
 <213> Homo sapiens

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<212> PRT

<213> Homo sapiens

<400> 254

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| Thr | Val | Ala | Ala | Gly | Gly | Thr | Ser | Thr | Gly | Gly | Val | Phe | Ser | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Gly | Thr | Gly | Thr | Ser | Ser | Asn | Pro | Ser | Val | Gly | Leu | Asn | Phe | Gly |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asn | Leu | Gly | Ser | Thr | Ser | Thr | Pro | Ala | Thr | Thr | Ser | Ala | Pro | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ser | Gly | Phe | Gly | Thr | Gly | Leu | Phe | Gly | Ser | Lys | Pro | Ala | Thr | Gly |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Thr | Leu | Gly | Gly | Thr | Asn | Thr | Gly | Ala | Leu | His | Thr | Lys | Arg |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Pro | Gln | Val | Val | Thr | Lys | Tyr | Gly | Thr | Leu | Gln | Gly | Lys | Gln | Met |
| | | | | 95 | | | | | 100 | | | | | 105 |
| His | Val | Gly | Lys | Thr | Pro | Ile | Gln | Val | Phe | Leu | Gly | Val | Pro | Phe |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Ser | Arg | Pro | Pro | Leu | Gly | Ile | Leu | Arg | Phe | Ala | Pro | Pro | Glu | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | |
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| | 425 | | 430 | | 435 |
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| | 440 | | 445 | | 450 |
| Leu Gly Val Asn Asn Leu Glu Phe Asn Trp Leu Leu Pro Tyr Asn | | | | | |
| | 455 | | 460 | | 465 |
| Ile Thr Lys Glu Gln Val Pro Leu Val Val Glu Glu Tyr Leu Asp | | | | | |
| | 470 | | 475 | | 480 |
| Asn Val Asn Glu His Asp Trp Lys Met Leu Arg Asn Arg Met Met | | | | | |
| | 485 | | 490 | | 495 |
| Asp Ile Val Gln Asp Ala Thr Phe Val Tyr Ala Thr Leu Gln Thr | | | | | |
| | 500 | | 505 | | 510 |
| Ala His Tyr His Arg Glu Thr Pro Met Met Gly Ile Cys Pro Ala | | | | | |
| | 515 | | 520 | | 525 |
| Gly His Ala Thr Thr Arg Met Lys Ser Thr Cys Ser Trp Ile Leu | | | | | |
| | 530 | | 535 | | 540 |
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 <223> Synthetic oligonucleotide probe

<400> 256
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<210> 257
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<210> 258
 <211> 2764
 <212> DNA
 <213> Homo sapiens

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<212> PRT

<213> Homo sapiens

<400> 259

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| Met | Leu | Leu | Pro | Leu | Leu | Leu | Ser | Ser | Leu | Leu | Gly | Gly | Ser | Gln |
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| Ala | Met | Asp | Gly | Arg | Phe | Trp | Ile | Arg | Val | Gln | Glu | Ser | Val | Met |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Val | Pro | Glu | Gly | Leu | Cys | Ile | Ser | Val | Pro | Cys | Ser | Phe | Ser | Tyr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Pro | Arg | Gln | Asp | Trp | Thr | Gly | Ser | Thr | Pro | Ala | Tyr | Gly | Tyr | Trp |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Phe | Lys | Ala | Val | Thr | Glu | Thr | Thr | Lys | Gly | Ala | Pro | Val | Ala | Thr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asn | His | Gln | Ser | Arg | Glu | Val | Glu | Met | Ser | Thr | Arg | Gly | Arg | Phe |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gln | Leu | Thr | Gly | Asp | Pro | Ala | Lys | Gly | Asn | Cys | Ser | Leu | Val | Ile |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Arg | Asp | Ala | Gln | Met | Gln | Asp | Glu | Ser | Gln | Tyr | Phe | Phe | Arg | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Glu | Arg | Gly | Ser | Tyr | Val | Thr | Tyr | Asn | Phe | Met | Asn | Asp | Gly | Phe |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Phe | Leu | Lys | Val | Thr | Val | Leu | Ser | Phe | Thr | Pro | Arg | Pro | Gln | Asp |
| | | | | 140 | | | | | 145 | | | | | 150 |
| His | Asn | Thr | Asp | Leu | Thr | Cys | His | Val | Asp | Phe | Ser | Arg | Lys | Gly |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Val | Ser | Ala | Gln | Arg | Thr | Val | Arg | Leu | Arg | Val | Ala | Tyr | Ala | Pro |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Arg | Asp | Leu | Val | Ile | Ser | Ile | Ser | Arg | Asp | Asn | Thr | Pro | Ala | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Glu | Pro | Gln | Pro | Gln | Gly | Asn | Val | Pro | Tyr | Leu | Glu | Ala | Gln | Lys |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gly | Gln | Phe | Leu | Arg | Leu | Leu | Cys | Ala | Ala | Asp | Ser | Gln | Pro | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ala | Thr | Leu | Ser | Trp | Val | Leu | Gln | Asn | Arg | Val | Leu | Ser | Ser | Ser |
| | | | | 230 | | | | | 235 | | | | | 240 |
| His | Pro | Trp | Gly | Pro | Arg | Pro | Leu | Gly | Leu | Glu | Leu | Pro | Gly | Val |
| | | | | 245 | | | | | 250 | | | | | 255 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Lys | Ala | Gly | Asp | Ser | Gly | Arg | Tyr | Thr | Cys | Arg | Ala | Glu | Asn | Arg | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Leu | Gly | Ser | Gln | Gln | Arg | Ala | Leu | Asp | Leu | Ser | Val | Gln | Tyr | Pro | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Pro | Glu | Asn | Leu | Arg | Val | Met | Val | Ser | Gln | Ala | Asn | Arg | Thr | Val | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Glu | Asn | Leu | Gly | Asn | Gly | Thr | Ser | Leu | Pro | Val | Leu | Glu | Gly | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Gln | Ser | Leu | Cys | Leu | Val | Cys | Val | Thr | His | Ser | Ser | Pro | Pro | Ala | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Arg | Leu | Ser | Trp | Thr | Gln | Arg | Gly | Gln | Val | Leu | Ser | Pro | Ser | Gln | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Pro | Ser | Asp | Pro | Gly | Val | Leu | Glu | Leu | Pro | Arg | Val | Gln | Val | Glu | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| His | Glu | Gly | Glu | Phe | Thr | Cys | His | Ala | Arg | His | Pro | Leu | Gly | Ser | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Gln | His | Val | Ser | Leu | Ser | Leu | Ser | Val | His | Tyr | Lys | Lys | Gly | Leu | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Ile | Ser | Thr | Ala | Phe | Ser | Asn | Gly | Ala | Phe | Leu | Gly | Ile | Gly | Ile | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Thr | Ala | Leu | Leu | Phe | Leu | Cys | Leu | Ala | Leu | Ile | Ile | Met | Lys | Ile | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Leu | Pro | Lys | Arg | Arg | Thr | Gln | Thr | Glu | Thr | Pro | Arg | Pro | Arg | Phe | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Ser | Arg | His | Ser | Thr | Ile | Leu | Asp | Tyr | Ile | Asn | Val | Val | Pro | Thr | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
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| Ser | Pro | Arg | Thr | Pro | Pro | Pro | Pro | Gly | Ala | Pro | Ser | Pro | Glu | Ser | |
| | | | | 470 | | | | | 475 | | | | | 480 | |
| Lys | Lys | Asn | Gln | Lys | Lys | Gln | Tyr | Gln | Leu | Pro | Ser | Phe | Pro | Glu | |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Pro | Lys | Ser | Ser | Thr | Gln | Ala | Pro | Glu | Ser | Gln | Glu | Ser | Gln | Glu | |
| | | | | 500 | | | | | 505 | | | | | 510 | |
| Glu | Leu | His | Tyr | Ala | Thr | Leu | Asn | Phe | Pro | Gly | Val | Arg | Pro | Arg | |
| | | | | 515 | | | | | 520 | | | | | 525 | |
| Pro | Glu | Ala | Arg | Met | Pro | Lys | Gly | Thr | Gln | Ala | Asp | Tyr | Ala | Glu | |
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<213> Homo sapiens

<400> 263
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    caacagaaaa ctctcaaaca aagaaagtca agcagccagt gcgatctcat 150
    ttgagagtga agcgtggctg ggtgtggaac caattttttg taccagagga 200
    aatgaatacg actagtcatc acatcggcca gctaagatct gatttagaca 250
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    tgatagagag gagcgatccc tctacatctt aagagcccag gtaatagaca 400
    tcgctactgg aagggtgtg gaacctgagt ctgagtttgt catcaaagtt 450

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 atogagataa catttacatt tctatcatat tgacatgaaa attgaaaatg 2800
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<210> 264
 <211> 772
 <212> PRT
 <213> Homo sapiens

<400> 264
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 20 25 30
 Val Lys Gln Pro Val Arg Ser His Leu Arg Val Lys Arg Gly Trp
 35 40 45
 Val Trp Asn Gln Phe Phe Val Pro Glu Glu Met Asn Thr Thr Ser
 50 55 60

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| His | His | Ile | Gly | Gln | Leu | Arg | Ser | Asp | Leu | Asp | Asn | Gly | Asn | Asn | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Phe | Gln | Tyr | Lys | Leu | Leu | Gly | Ala | Gly | Ala | Gly | Ser | Thr | Phe | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ile | Ile | Asp | Glu | Arg | Thr | Gly | Asp | Ile | Tyr | Ala | Ile | Gln | Lys | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asp | Arg | Glu | Glu | Arg | Ser | Leu | Tyr | Ile | Leu | Arg | Ala | Gln | Val | Ile | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asp | Ile | Ala | Thr | Gly | Arg | Ala | Val | Glu | Pro | Glu | Ser | Glu | Phe | Val | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Ile | Lys | Val | Ser | Asp | Ile | Asn | Asp | Asn | Glu | Pro | Lys | Phe | Leu | Asp | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Glu | Pro | Tyr | Glu | Ala | Ile | Val | Pro | Glu | Met | Ser | Pro | Glu | Gly | Thr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Val | Ile | Gln | Val | Thr | Ala | Ser | Asp | Ala | Asp | Asp | Pro | Ser | Ser | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gly | Asn | Asn | Ala | Arg | Leu | Leu | Tyr | Ser | Leu | Leu | Gln | Gly | Gln | Pro | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Tyr | Phe | Ser | Val | Glu | Pro | Thr | Thr | Gly | Val | Ile | Arg | Ile | Ser | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Lys | Met | Asp | Arg | Glu | Leu | Gln | Asp | Glu | Tyr | Trp | Val | Ile | Ile | Gln | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Lys | Asp | Met | Ile | Gly | Gln | Pro | Gly | Ala | Leu | Ser | Gly | Thr | Thr | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ser | Val | Leu | Ile | Lys | Leu | Ser | Asp | Val | Asn | Asp | Asn | Lys | Pro | Ile | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Phe | Lys | Glu | Ser | Leu | Tyr | Arg | Leu | Thr | Val | Ser | Glu | Ser | Ala | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Thr | Gly | Thr | Ser | Ile | Gly | Thr | Ile | Met | Ala | Tyr | Asp | Asn | Asp | Ile | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Gly | Glu | Asn | Ala | Glu | Met | Asp | Tyr | Ser | Ile | Glu | Glu | Asp | Asp | Ser | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Gln | Thr | Phe | Asp | Ile | Ile | Thr | Asn | His | Glu | Thr | Gln | Glu | Gly | Ile | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Val | Ile | Leu | Lys | Lys | Lys | Val | Asp | Phe | Glu | His | Gln | Asn | His | Tyr | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Gly | Ile | Arg | Ala | Lys | Val | Lys | Asn | His | His | Val | Pro | Glu | Gln | Leu | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Met | Lys | Tyr | His | Thr | Glu | Ala | Ser | Thr | Thr | Phe | Ile | Lys | Ile | Gln | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 350 | | 355 | | 360 |
| Val Glu Asp Val | Asp Glu Pro Pro Leu | Phe Leu Leu Pro Tyr | Tyr | | |
| | 365 | | 370 | | 375 |
| Val Phe Glu Val | Phe Glu Glu Thr Pro | Gln Gly Ser Phe Val | Gly | | |
| | 380 | | 385 | | 390 |
| Val Val Ser Ala | Thr Asp Pro Asp Asn | Arg Lys Ser Pro Ile | Arg | | |
| | 395 | | 400 | | 405 |
| Tyr Ser Ile Thr | Arg Ser Lys Val Phe | Asn Ile Asn Asp Asn | Gly | | |
| | 410 | | 415 | | 420 |
| Thr Ile Thr Thr | Ser Asn Ser Leu Asp | Arg Glu Ile Ser Ala | Trp | | |
| | 425 | | 430 | | 435 |
| Tyr Asn Leu Ser | Ile Thr Ala Thr Glu | Lys Tyr Asn Ile Glu | Gln | | |
| | 440 | | 445 | | 450 |
| Ile Ser Ser Ile | Pro Leu Tyr Val Gln | Val Leu Asn Ile Asn | Asp | | |
| | 455 | | 460 | | 465 |
| His Ala Pro Glu | Phe Ser Gln Tyr Tyr | Glu Thr Tyr Val Cys | Glu | | |
| | 470 | | 475 | | 480 |
| Asn Ala Gly Ser | Gly Gln Val Ile Gln | Thr Ile Ser Ala Val | Asp | | |
| | 485 | | 490 | | 495 |
| Arg Asp Glu Ser | Ile Glu Glu His His | Phe Tyr Phe Asn Leu | Ser | | |
| | 500 | | 505 | | 510 |
| Val Glu Asp Thr | Asn Asn Ser Ser Phe | Thr Ile Ile Asp Asn | Gln | | |
| | 515 | | 520 | | 525 |
| Asp Asn Thr Ala | Val Ile Leu Thr Asn | Arg Thr Gly Phe Asn | Leu | | |
| | 530 | | 535 | | 540 |
| Gln Glu Glu Pro | Val Phe Tyr Ile Ser | Ile Leu Ile Ala Asp | Asn | | |
| | 545 | | 550 | | 555 |
| Gly Ile Pro Ser | Leu Thr Ser Thr Asn | Thr Leu Thr Ile His | Val | | |
| | 560 | | 565 | | 570 |
| Cys Asp Cys Gly | Asp Ser Gly Ser Thr | Gln Thr Cys Gln Tyr | Gln | | |
| | 575 | | 580 | | 585 |
| Glu Leu Val Leu | Ser Met Gly Phe Lys | Thr Glu Val Ile Ile | Ala | | |
| | 590 | | 595 | | 600 |
| Ile Leu Ile Cys | Ile Met Ile Ile Phe | Gly Phe Ile Phe Leu | Thr | | |
| | 605 | | 610 | | 615 |
| Leu Gly Leu Lys | Gln Arg Arg Lys Gln | Ile Leu Phe Pro Glu | Lys | | |
| | 620 | | 625 | | 630 |
| Ser Glu Asp Phe | Arg Glu Asn Ile Phe | Gln Tyr Asp Asp Glu | Gly | | |
| | 635 | | 640 | | 645 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Gly | Glu | Glu | Asp | Thr | Glu | Ala | Phe | Asp | Ile | Ala | Glu | Leu | Arg | 650 | 655 | 660 |
| Ser | Ser | Thr | Ile | Met | Arg | Glu | Arg | Lys | Thr | Arg | Lys | Thr | Thr | Ser | 665 | 670 | 675 |
| Ala | Glu | Ile | Arg | Ser | Leu | Tyr | Arg | Gln | Ser | Leu | Gln | Val | Gly | Pro | 680 | 685 | 690 |
| Asp | Ser | Ala | Ile | Phe | Arg | Lys | Phe | Ile | Leu | Glu | Lys | Leu | Glu | Glu | 695 | 700 | 705 |
| Ala | Asn | Thr | Asp | Pro | Cys | Ala | Pro | Pro | Phe | Asp | Ser | Leu | Gln | Thr | 710 | 715 | 720 |
| Tyr | Ala | Phe | Glu | Gly | Thr | Gly | Ser | Leu | Ala | Gly | Ser | Leu | Ser | Ser | 725 | 730 | 735 |
| Leu | Glu | Ser | Ala | Val | Ser | Asp | Gln | Asp | Glu | Ser | Tyr | Asp | Tyr | Leu | 740 | 745 | 750 |
| Asn | Glu | Leu | Gly | Pro | Arg | Phe | Lys | Arg | Leu | Ala | Cys | Met | Phe | Gly | 755 | 760 | 765 |
| Ser | Ala | Val | Gln | Ser | Asn | Asn | | | | | | | | | 770 | | |

<210> 265
 <211> 349
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 24, 60, 141, 226, 228, 249, 252
 <223> unknown base

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 attcaagcca aggacatgat tggtcagcca ggagcgttgt ntgaacaac 150
 aagtgtatta attaaacttt cagatgttaa tgacaataag cctatattta 200
 aagaaagttt ataccgcttg actgtntntg aatctgcacc cactgggant 250
 tntataggaa caatcatggc atatgataat gacataggag agaatgcaga 300
 aatggattac agcattgaag aggatgattc gcaaacattt gacattatt 349

<210> 266
 <211> 25
 <212> DNA
 <213> Artificial Sequence
 <220>

<223> Synthetic oligonucleotide probe

<400> 266

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<210> 267

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 267

aagtgggtgga agcctccagt gtgg 24

<210> 268

<211> 52

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 268

ccactacggt attagagcaa aagttaaaaa ccatcatggt tcttgagca 50

gc 52

<210> 269

<211> 2747

<212> DNA

<213> Homo sapiens

<400> 269

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cccgccttaa cttcctccgc ggggccagc caccttcggg agtccgggtt 150

gccacctgc aaactctccg cttctgcac ctgccacccc tgagccagcg 200

cgggcccccg agcgagtcag ggccaacgag gggctgcagc tgttgggctt 250

cattctcgcc ttcctgggat ggatcggcgc catcgtcagc actgccctgc 300

ccagtgag gatttactcc tatgccggcg acaacatcgt gaccgcccag 350

gccatgtacg aggggctgtg gatgtcctgc gtgtcgaga gcaccgggca 400

gatccagtgc aaagtctttg actccttgct gaatctgagc agcacattgc 450

aagcaacccg tgccttgatg gtggttggca tctcctggg agtgatagca 500

atctttgtgg ccaccgttgg catgaagtgt atgaagtgc tggaagacga 550

tgaggtgcag aagatgagga tggtgtcat tgggggtgcg atatttcttc 600

tttatattac tcttattctt tgaacatgaa ctatgcctat gtagtgtctt 2100
tatttgctca gctggctgag aactgaaga agtcactgaa caaacctac 2150
acacgtacct tcatgtgatt cactgccttc ctctctctac cagtctattt 2200
ccactgaaca aaacctacac acataccttc atgtggttca gtgccttcct 2250
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tccagtctgt acagaatgct atttcacttg agcaagatga tgtaatggaa 2450
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atttaaaaag tgctatacta agggaaagaa ttgaggaatt aactgcatac 2700
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<210> 270

<211> 211

<212> PRT

<213> Homo sapiens

<400> 270

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Asn | Ala | Gly | Leu | Gln | Leu | Leu | Gly | Phe | Ile | Leu | Ala | Phe |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gly | Trp | Ile | Gly | Ala | Ile | Val | Ser | Thr | Ala | Leu | Pro | Gln | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Ile | Tyr | Ser | Tyr | Ala | Gly | Asp | Asn | Ile | Val | Thr | Ala | Gln | Ala |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Tyr | Glu | Gly | Leu | Trp | Met | Ser | Cys | Val | Ser | Gln | Ser | Thr | Gly |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Ile | Gln | Cys | Lys | Val | Phe | Asp | Ser | Leu | Leu | Asn | Leu | Ser | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Leu | Gln | Ala | Thr | Arg | Ala | Leu | Met | Val | Val | Gly | Ile | Leu | Leu |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Val | Ile | Ala | Ile | Phe | Val | Ala | Thr | Val | Gly | Met | Lys | Cys | Met |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Cys | Leu | Glu | Asp | Asp | Glu | Val | Gln | Lys | Met | Arg | Met | Ala | Val |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Ile Gly Gly Ala | Ile Phe Leu Leu Ala | Gly Leu Ala Ile Leu | Val |
| 125 | | 130 | 135 |
| Ala Thr Ala Trp | Tyr Gly Asn Arg Ile | Val Gln Glu Phe Tyr | Asp |
| 140 | | 145 | 150 |
| Pro Met Thr Pro | Val Asn Ala Arg Tyr | Glu Phe Gly Gln Ala | Leu |
| 155 | | 160 | 165 |
| Phe Thr Gly Trp | Ala Ala Ala Ser Leu | Cys Leu Leu Gly Gly | Ala |
| 170 | | 175 | 180 |
| Leu Leu Cys Cys | Ser Cys Pro Arg Lys | Thr Thr Ser Tyr Pro | Thr |
| 185 | | 190 | 195 |
| Pro Arg Pro Tyr | Pro Lys Pro Ala Pro | Ser Ser Gly Lys Asp | Tyr |
| 200 | | 205 | 210 |

Val

<210> 271
 <211> 564
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 21, 69, 163, 434, 436, 444
 <223> unknown base

<400> 271
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 ctccctatgc tggcgacaac atcgtgaccg cccagcccat gtacgagggg 150
 ctgtggatgt ccngcgtgtc gcagagcacc gggcagatcc agtgcaaagt 200
 ctttgactcc ttgctgaatc tgagcagcac attgcaagca acccgtgcct 250
 tgatgggtgg ttggatcctc ctgggagtga tagcaatctt tgtggccacc 300
 gttggcatga agtgatatga gtgcttgga gacgatgagg tgcagaagat 350
 gaggatggct gtcattgggg gcgcgatatt tcttcttgca ggtctggcta 400
 ttttagttgc cacagcatgg tatggcaata gaancnttca acanttttat 450
 gaccctatga cccagtcac tgccaggtag gaatttggtc aggcctctct 500
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 gctgttcctg tccc 564

<210> 272
 <211> 498

<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 30, 49, 102, 141, 147, 171, 324-325, 339-341
<223> unknown base

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cntcagcact gccctgcccc agtggaggat ttactcctat nccggcnaca 150
acatcgtgac cgcccaggcc ntgtacgagg ggctgtggat gtccctgcgtg 200
tcgcagagca cggggcagat ccagtgc aaa gtctttgact cccttgctga 250
atctgagcag cacattgcaa gcaaccogtg ccttgatggg ggttggcatc 300
ctcctgggag tgatagcaat cttnttggcc accgttgtnn ntgaagtgt 350
tgaagtgtt ggaagacgat gaggtgcaga agatgaggat ggctgtcatt 400
gggggcgca tatttcttct tgcaggtctg gctatttttag ttgccacagc 450
atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccga 498

<210> 273
<211> 552
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 25, 57, 67, 94-95, 116, 152, 165, 212, 233, 392-394
<223> unknown base

<400> 273
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gatgaancc gccatcntca gactccctgc cccatggaga tttnnccat 100
gctggcgaca acatontgac cccagccat gtacgagggg ctttgaacgt 150
cngcgtgtcg cagancaccg ggcagatcca gtgcaaagtc tttgactcct 200
tgctgaatct gngcagcaca ttgcagcaac centgccctg atggtgggtg 250
gcactcctct gggagtgata gcaatctttg tggccaccgt tggcatgaag 300
tgtatgaagt gcttgaaga cgatgaggtg cagaagatga ggatggctgt 350
cattgggggc gcgatatttc ttcttgacgg tctggctatt tnnngttgcc 400
acagcatggt atggcaatag aatcgttcaa gaattctatg accctatgac 450

gcgcgatatt tcttcttgca ggtctggcta ttttagtnnc cacagcatgg 250
 tatggcaata gnatnnttcg nggnttctat gaccctatga cccagtc aa 300
 tgccaggtac gaatttggtc aggctctctt cactggctgg gctgctgctt 350
 ctctctgcct tctgggaggt gccctacttt gctgttctctg tccccgaa 398

<210> 276
 <211> 495
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 39, 58, 130, 234, 314, 364, 427, 450, 461, 476
 <223> unknown base

<400> 276
 agcaatgccc tgccccaggt ggaggattaa ttcctatgnt ggggacaaca 50
 ttgtgacngc ccaggccatg tacggggggc tgtggatgtc ctgogtgtcg 100
 cagagcaccg ggcagatcca gtgcaaagtn tttgactcct tgctgaattt 150
 gagcagcaca ttgcaagcaa cccgtgcctt gatggtgggtt ggcattcttcc 200
 tgggagtgat agcaatcttt gtggccaccg tggnaatgaa gtgtatgaag 250
 tgcttggaag acgatgaggt gcagaagatg aggatggctg tcattggggg 300
 cgcgatattt cttnttgca gtcctggctat tttagttgcc acagcatggg 350
 atggcaatag aatngttcaa gaattttatg accctatgac cccagtc aa 400
 gccaggtacg aatttggtca ggctttnttc actggctggg ctgctgcttn 450
 tttctgcctt ntgggaggtg ccctantttg ctgttctctg gaacc 495

<210> 277
 <211> 200
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 34, 87, 138, 147, 163, 165-166, 172
 <223> unknown base

<400> 277
 tcataggggg gcgcgatatt ttttcttgca ggtntgggta ttttagttgc 50
 cacagcatgg tatggcaata gaatcggtca agaattntat gaccctatga 100
 cccagtc aa tgccaggtac gaatttggtc aggctctntt cactggntgg 150
 gctgctgctt ctntnngcct tntgggaggt gccctacttt gctgttctctg 200

<210> 278
 <211> 542
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 26, 43, 55, 77, 198, 361-362, 391-392, 396
 <223> unknown base

<400> 278
 ttccctgggat ggatccgccc ccatcntcac atgccctgcc cnttggagat 50
 ttacnoctat gctggcgaac aacatcntga ccgcccaggc catgtacgag 100
 gggctgtgga atgtcctgcg tgtcccagag caccgggcag atccagtgcg 150
 aagtctttga ctcccttgctg aatctgagca gcacattgca agcaacctg 200
 ccttgatggt ggttggcatc ctccctgggag tgatagcaat ctttgtggcc 250
 accgttggca tgaagtgta tgaagtgctt ggaagacgat gaggtgcaga 300
 agatgaggat ggctgtcatt gggggcgaga tttttcttct tgcaggtctg 350
 gctatttttag nngccacagc atggtatggc aatcagaccc nntcanaaac 400
 tctatgaccc tatgaccca gtcaatgcca ggtacgaatt tggtcaggct 450
 ctcttcactg gctgggctgc tgcttctctc tgcccttctg gaggtgccct 500
 actttgtgtg tcctgtcccc gaaaaacaac ctcttaccca cg 542

<210> 279
 <211> 548
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 90, 115, 147, 228, 387
 <223> unknown base

<400> 279
 cggggctgca gctgttgggc ttcatctcgc ttccctgggat ggaatoggcg 50
 ccatcgtcag cactgccctg ccccatggag gatttactcn tatgctggcg 100
 acaacatcgt gaccncccag gccatgtacg aggggctgtg gatgtcngcg 150
 tgtcgagag caccgggcag atccagtgcg aagtctttga ctcccttgctg 200
 aatctgagca gcacattgca agcaacctg ccttgatggt ggttggcatc 250
 ctccctgggag tgatagcaat ctttgtggcc accgttggca tgaagtgtat 300
 gaagtgcttg gaagacgatg aggtgcagaa gatgaggatg gctgtcattg 350

ggggcgcgat atttcttctt gcaggtcttg ctattntag ttgccacagc 400
atggtatggc aatagaatcg ttcaagaatt ctatgaccct atgaccccag 450
tcaatgccag gtacgaattt ggtcaggctc tcttactgg ctgggctgct 500
gcttctctct gccttctggg aggtgcccta ctttgctgtt cctgcgaa 548

<210> 280

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 280

cgagcgagtc atggccaacg c 21

<210> 281

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 281

gtgtcacacg tagtctttcc cgctgg 26

<210> 282

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 282

ctgcagctgt tgggcttcat tctgccttc ctgggatgga tcg 43

<210> 283

<211> 2285

<212> DNA

<213> Homo sapiens

<400> 283

gcgtgcogtc agctcgccgg gcaccgggc ctgcacctcg ccctccgccc 50

ctgcgcctgc accgcgtaga ccgaccccc cctccagcgc gccacccgg 100

tagaggaccc ccgcccgtgc cccgaccggt cccgccttt ttgtaaaact 150

taaagcgggc gcagcattaa cgcttccgc cccggtgacc tctcaggggt 200

ctccccgcca aaggtgctcc gccgctaagg aacatggcga aggtggagca 250

ggtcctgagc ctgcagccgc agcacgagct caaattccga ggtcccttca 300

ccgatgttgt caccaccaac ctaaagcttg gcaacccgac agaccgaaat 350
gtgtgtttta aggtgaagac tacagcacca cgtaggtact gtgtgaggcc 400
caacagcgga atcatcgatg caggggcctc aattaatgta tctgtgatgt 450
tacagccttt cgattatgat cccaatgaga aaagtaaaca caagtttatg 500
gttcagtcta tgtttgctcc aactgacact tcagatatgg aagcagtatg 550
gaaggaggca aaaccggaag accttatgga ttcaaaactt agatgtgtgt 600
ttgaattgcc agcagagaat gataaaccac atgatgtaga aataaataaa 650
attatatcca caactgcato aaagacagaa acaccaatag tgtctaagtc 700
tctgagttct tctttggatg acaccgaagt taagaagggt atggaagaat 750
gtaagaggct gcaaggtgaa gttcagaggc tacgggagga gaacaagcag 800
ttcaaggaag aagatggact gcggatgagg aagacagtgc agagcaacag 850
ccccatttca gcattagccc caactgggaa ggaagaaggc cttagcaccc 900
ggctcttggc tctggtggtt ttgttcttta tcgttggtgt aattattggg 950
aagattgcct tgtagaggta gcatgcacag gatggtaa at tggattggtg 1000
gatccaccat atcatgggat ttaaatttat cataaccatg tgtaaaaaga 1050
aattaatgta tgatgacatc tcacaggtct tgcctttaa ttaccctcc 1100
ctgcacacac atacacagat acacacacac aaatataatg taacgatctt 1150
ttagaaagtt aaaaatgtat agtaactgat tgagggggaa aaagaatgat 1200
ctttattaat gacaaggga accatgagta atgccacaat ggcatattgt 1250
aaatgtcatt ttaaacattg gtaggccttg gtacatgatg ctggattacc 1300
tctcttaaaa tgacaccctt cctcgctgtg tgggtgctggc ccttggggag 1350
ctggagccca gcatgctggg gagtgcggtc agctccacac agtagtcccc 1400
acgtggccca ctcccgccc aggctgcttt ccgtgtcttc agttctgtcc 1450
aagccatcag ctcttgga ctgatgaaca gagtcagaag ccaaaggaa 1500
ttgcaactgtg gcagcatcag acgtactcgt cataagtgag aggcgtgtgt 1550
tgactgattg acccagcgct ttggaaataa atggcagtgc tttgttact 1600
taaagggacc aagctaaatt tgtattggtt catgtagtga agtcaaactg 1650
ttattcagag atgtttaatg catatttaac ttatttaatg tatttcatct 1700
catgttttct tattgtcaca agagtacagt taatgctgcg tgctgctgaa 1750

ctctgttggg tgaactggta ttgctgctgg agggctgtgg gctcctctgt 1800
ctctggagag tctgggtcatg tggaggtggg gtttattggg atgctggaga 1850
agagctgcca ggaagtgttt tttctgggtc agtaaataac aactgtcata 1900
gggagggaaa ttctcagtag tgacagtcaa ctctaggtta ctttttttaa 1950
tgaagagtag tcagtcttct agattgttct tataccacct ctcaaccatt 2000
actcacactt ccagcgccca ggtccaagtc tgagcctgac ctccccttgg 2050
ggacctagcc tggagtcagg acaaatggat cgggctgcag agggttagaa 2100
gcgagggcac cagcagttgt ggggtggggag caagggaaga gagaaactct 2150
tcagcgaatc cttctagtag tagttgagag tttgactgtg aattaatttt 2200
atgccataaa agaccaaccc agttctgttt gactatgtag catcttgaaa 2250
agaaaaatta taataaagcc ccaaaattaa gaaaa 2285

<210> 284
<211> 243
<212> PRT
<213> Homo sapiens

<400> 284
Met Ala Lys Val Glu Gln Val Leu Ser Leu Glu Pro Gln His Glu
1 5 10 15
Leu Lys Phe Arg Gly Pro Phe Thr Asp Val Val Thr Thr Asn Leu
20 25 30
Lys Leu Gly Asn Pro Thr Asp Arg Asn Val Cys Phe Lys Val Lys
35 40 45
Thr Thr Ala Pro Arg Arg Tyr Cys Val Arg Pro Asn Ser Gly Ile
50 55 60
Ile Asp Ala Gly Ala Ser Ile Asn Val Ser Val Met Leu Gln Pro
65 70 75
Phe Asp Tyr Asp Pro Asn Glu Lys Ser Lys His Lys Phe Met Val
80 85 90
Gln Ser Met Phe Ala Pro Thr Asp Thr Ser Asp Met Glu Ala Val
95 100 105
Trp Lys Glu Ala Lys Pro Glu Asp Leu Met Asp Ser Lys Leu Arg
110 115 120
Cys Val Phe Glu Leu Pro Ala Glu Asn Asp Lys Pro His Asp Val
125 130 135
Glu Ile Asn Lys Ile Ile Ser Thr Thr Ala Ser Lys Thr Glu Thr
140 145 150

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Ile | Val | Ser | Lys | Ser | Leu | Ser | Ser | Ser | Leu | Asp | Asp | Thr | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Val | Lys | Lys | Val | Met | Glu | Glu | Cys | Lys | Arg | Leu | Gln | Gly | Glu | Val |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gln | Arg | Leu | Arg | Glu | Glu | Asn | Lys | Gln | Phe | Lys | Glu | Glu | Asp | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu | Arg | Met | Arg | Lys | Thr | Val | Gln | Ser | Asn | Ser | Pro | Ile | Ser | Ala |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Leu | Ala | Pro | Thr | Gly | Lys | Glu | Glu | Gly | Leu | Ser | Thr | Arg | Leu | Leu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ala | Leu | Val | Val | Leu | Phe | Phe | Ile | Val | Gly | Val | Ile | Ile | Gly | Lys |
| | | | | 230 | | | | | 235 | | | | | 240 |

Ile Ala Leu

<210> 285
 <211> 418
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 40, 53, 68, 119, 134, 177-178, 255
 <223> unknown base

<400> 285
 gtcagtcttc tagattgtcc ttatcccacc tttcaaccan tactcacatt 50
 tonagcgccc aggtccangt ctgagcctga cttccccttg gggacctagc 100
 ctggagtcag gacaatggnt cgggctgcag aggnntagaa gcgagggcac 150
 cagcagtttt ggggtggggag caagggngga gagaaactct tcagcgaatc 200
 cttctagtag tagttgagag tttgactgtg aattaatttt atgccataaa 250
 agacnaaccc agttctgttt gactatgtag catcttgaaa agaaaaatta 300
 taataaagcc ccaaaattaa gaattctttt gtcattttgt cacatttgct 350
 ctatgggggg aattattatt ttatcatttt tattattttg ccattggaag 400
 gttaacttta aaatgagc 418

<210> 286
 <211> 543
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 73, 97

<223> unknown base

<400> 286

tattgtaaaag gccatttttaa accatttggtta ggccttggtta catgatgctg 50
gattacctcc ttaaattgaca ccnttcctcg cctgttggtg ctggccnttg 100
gggagctgga gccccagcat gctggggagt gcggtcagct ccacacagta 150
gtccccacgt ggcccactcc cggcccaggc tgctttccgt gtcttcagtt 200
ctgtccaagc catcagctcc ttgggactga tgaacagagt cagaagccca 250
aaggaattgc cactgtggca gcatcagacg tactcgatcat aagtgaagg 300
cgtgtgttga ctgattgacc cagcgctttg gaaataaatg gcagtgcctt 350
gttactttaa agggaccaag ctaaattgta ttggttcatt tagtgaagtc 400
aaactgttat tcagagatgt ttaatgcata ttttaacttat ttaatgtatt 450
tcattctatg ttttcttatt gtcacaagag tacagttaat gctgcgtgct 500
gctgaactct gttgggtgaa ctgggtattgc tgctggaggg ctg 543

<210> 287

<211> 270

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 38, 64, 72, 164, 198, 200, 220, 222, 229, 242

<223> unknown base

<400> 287

ccctgggtggt tttgttcttt aattcggttg tgtaattntt gggaagattg 50
ctttagtagg tagnatgcac cnggctggta aattggattg gtggatccac 100
catatccatg ggattttaaat ttatcataac catgtgtaaa aagaaattaa 150
tgtatgatga catntcacag gtattgcctt taaattaccc atccctgnan 200
acacatacac agatacacan anacaaatnt aatgtaacga tnttttagaa 250
agttaaaaaat gtatagtaac 270

<210> 288

<211> 428

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 35, 116, 129, 197, 278, 294, 297, 349, 351

<223> unknown base

<400> 288
 ggtggcccat tcccggccca ggctgctttc cggtnnttcag ttctgtccaa 50
 gccatcagct ccttgggact gatgaacaga gtcagaagcc caaaggaatt 100
 gcaactgtggc agcatnagac gtacttgtna taagtgagag gcgtgtgttg 150
 actgattgac ccagcgcttt ggaaataaat ggcagtgcct tgttcantta 200
 aagggaccaa gctaaatttg tattggttca tgtagtgaag tcaaactgtt 250
 attcagagat gtttaatgca tatttaantt atttaatgta ttnatntca 300
 tgttttctta ttgtcacaag agtacagtta atgctgcgtg ctgctgaant 350
 ntgttgggtg aactggtatt gctgctggag ggctgtgggc tcctctgtct 400
 ttggagagtc tggatcatgtg gaggtggg 428

<210> 289
 <211> 320
 <212> DNA
 <213> Homo sapiens

<400> 289
 tgctttccgt gtcttcagtt ctgtccaagc catcagctcc ttgggacttg 50
 atgaacagag tcagaagccc aaaggaattg cactgtggca gcatcagacg 100
 tactcgtcat aagtgagagg cgtgtgttga ctgattgacc cagcgctttg 150
 gaaataaatg gcagtgcctt gtacacttaa agggaccaag ctaaatttgt 200
 attggttcat gtagtgaagt caaactgtta ttacagagat tttaatgcat 250
 atttaactta tttaatgtat ttcactctcat gttttcttat tgtcacaaga 300
 gtacagttaa tgctgcgtgc 320

<210> 290
 <211> 609
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 57, 60, 186, 235, 244, 304, 339, 355, 359, 361, 387, 432, 441,
 447, 481, 513, 532, 584, 598
 <223> unknown base

<400> 290
 aaacctttaa aagttgaggg gaaaagaatg atcctttatt aatgacaagg 50
 gaaaccntgn gtaatgccac aatggcatat tgtaaatgtc attttaaaca 100
 ttggtaggcc ttggtacatg atgctggatt acctctctta aaatgacacc 150
 cttcctcgcc tgttgggtgct ggcccttggg gagctngagc ccagcatgct 200

ggggagtgcg gtctgtcca cacagtagtc cccangtggc ccantcccgg 250
 cccaggctgc tttccgtgtc ttcagttctg tccaagccat cagctccttg 300
 ggantgatga acagagtcag aagcccaaag gaattgcant gtggcagcat 350
 cagangtant ngtcataagt gagaggcgtg tgttgantga ttgaccagc 400
 gctttggaaa taaatggcag tgctttgttc anttaaaggg nccaagntaa 450
 atttgattg gttcatgtag tgaagtcaaa ntgttattca gagatgttta 500
 atgcatatth aanttattta atgtatttca tntcatgttt tcttattgtc 550
 acaagggtag agttaatgct gcgtgctgct gaantctgtt gggatgaantg 600
 gtattgctg 609

<210> 291
 <211> 493
 <212> DNA
 <213> Homo sapiens

<400> 291
 gggccttggg gagctggagc ccagcatgct ggggagtgcg gtcagctcca 50
 cacagtagtc cccacgtggc ccactcccgg cccaggctgc tttccgtgtc 100
 ttcagttctg tccaagccat cagctccttg ggactgatga acagagtcag 150
 aagcccaaag gaattgcact gtggcagcat cagacgtact cgtcataagt 200
 gagaggcgtg tgttgactga ttgaccagc gctttggaaa taaatggcag 250
 tgctttgttc acttaaaggg accaagctaa atttgattg gttcatgtag 300
 tgaagtcaaa ctgttattca gagatgttta atgcatatth aacttattta 350
 atgtatttca tctcatgttt tcttattgtc acaagagtag agttaatgct 400
 gcgtgctgct gaactctgtt gggatgaactg gtattgctgc tggagggctg 450
 tgggctcctc tgtctctgga gagtctgggc atgtggaggt ggg 493

<210> 292
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 292
 gcaccaccgt aggtacttgt gtgaggc 27

<210> 293
 <211> 23
 <212> DNA

[illegible]

<400> 293

actatgtcaa agggagtaaa aagctaaggg tagggttggtt gaagatgagg 850

aataaaagtg gaggcaagaa acgtcgaggt tctaagagga gcaggagaga 900
agctagtggg ggtgaccaa gagaggggtac cagagagcat ctgcaggaga 950
gagcgaaggg tgggagaaga agaaaaaat ctggccgggg tcagaggatt 1000
gccgaaggga ggccttcctt tcagtggacc cgggtcaaga atacccacat 1050
tccgaagggc tgggcacgag gaggcattgg ggacgctacc ttggactatg 1100
actatgctct tctggagctg aagcgtgctc aaaaaagaa atacatggaa 1150
cttggaatca gccaacgat caagaaaatg cctgggtgaa tgatccactt 1200
ctcaggatit gataacgata gggctgatca gttggtctat cggttttgca 1250
gtgtgtccga cgaatccaat gatctccttt accaatactg cgatgctgag 1300
tcgggctcca ccggttcggg ggtctatctg cgtctgaaag atccagacaa 1350
aaagaattgg aagcgcaaaa tcattgcggg ctactcaggg caccagtggg 1400
tggtatgtcca cggggttcag aaggactaca acgttgctgt tcgcatcact 1450
cccctaaat acgccagat ttgcctctgg attcacggga acgatgccaa 1500
ttgtgcttac ggctaacaga gacctgaaac agggcggtgt atcatctaaa 1550
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atgcctggac ttgaactctg tcaatagcat ttcaacattt ttcaaaatca 1650
ggagattttc gtccatttaa aaaatgtata ggtgcagata ttgaaactag 1700
gtgggcactt caatgccaa tatatactct tctttacatg gtgatgagtt 1750
tcatttgtag aaaaattttg ttgccttctt aaaaattaga cacactttaa 1800
accttcaaac aggtattata aataacatgt gactccttaa tggacttatt 1850
ctcagggtcc tactctaaga agaatcta ataggatgctgg ttgtgtatta 1900
aatgtgaaat tgcatagata aaggtagatg gtaaagcaat tagtatcaga 1950
atagagacag aaagttacaa cacagtttgt actactctga gatggatcca 2000
ttcagctcat gccctcaatg tttatattgt gttatctgtt gggctctggga 2050
catttagttt agtttttttg aagaattaca aatcagaaga aaaagcaagc 2100
attataaaca aaactaataa ctgttttact gctttaagaa ataacaatta 2150
caatgtgtat tatttaaaaa tgggagaaat agtttgttct atgaaataaa 2200
cctagtttag aaataggga gctgagacat tttaagatct caagttttta 2250
tttaactaat actcaaaata tggacttttc atgtatgcat agggaagaca 2300

cttcacaaat tatgaatgat catgtgttga aagccacatt attttatgct 2350
 atacattcta tgtatgaggt gctacatttt taggacaaag aattctgtaa 2400
 tctttttcaa gaaagagtct ttttctcctt gacaaaatcc agcttttgta 2450
 tgaggactat aggggtgaatt ctctgattag taattttaga tatgtccttt 2500
 cctaaaaaatg aataaaattt atgaatatga 2530

<210> 296

<211> 413

<212> PRT

<213> Homo sapiens

<400> 296

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Glu | Asn | Met | Leu | Leu | Trp | Leu | Ile | Phe | Phe | Thr | Pro | Gly | Trp | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Thr | Leu | Ile | Asp | Gly | Ser | Glu | Met | Glu | Trp | Asp | Phe | Met | Trp | His | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Leu | Arg | Lys | Val | Pro | Arg | Ile | Val | Ser | Glu | Arg | Thr | Phe | His | Leu | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Thr | Ser | Pro | Ala | Phe | Glu | Ala | Asp | Ala | Lys | Met | Met | Val | Asn | Thr | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Val | Cys | Gly | Ile | Glu | Cys | Gln | Lys | Glu | Leu | Pro | Thr | Pro | Ser | Leu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Ser | Glu | Leu | Glu | Asp | Tyr | Leu | Ser | Tyr | Glu | Thr | Val | Phe | Glu | Asn | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Gly | Thr | Arg | Thr | Leu | Thr | Arg | Val | Lys | Val | Gln | Asp | Leu | Val | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Glu | Pro | Thr | Gln | Asn | Ile | Thr | Thr | Lys | Gly | Val | Ser | Val | Arg | Arg | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Lys | Arg | Gln | Val | Tyr | Gly | Thr | Asp | Ser | Arg | Phe | Ser | Ile | Leu | Asp | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Lys | Arg | Phe | Leu | Thr | Asn | Phe | Pro | Phe | Ser | Thr | Ala | Val | Lys | Leu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ser | Thr | Gly | Cys | Ser | Gly | Ile | Leu | Ile | Ser | Pro | Gln | His | Val | Leu | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Thr | Ala | Ala | His | Cys | Val | His | Asp | Gly | Lys | Asp | Tyr | Val | Lys | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ser | Lys | Lys | Leu | Arg | Val | Gly | Leu | Leu | Lys | Met | Arg | Asn | Lys | Ser | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Gly | Gly | Lys | Lys | Arg | Arg | Gly | Ser | Lys | Arg | Ser | Arg | Arg | Glu | Ala | |
| | | | | 200 | | | | | 205 | | | | | 210 | |

Ser Gly Gly Asp Gln Arg Glu Gly Thr Arg Glu His Leu Gln Glu
215 220 225

Arg Ala Lys Gly Gly Arg Arg Arg Lys Lys Ser Gly Arg Gly Gln
230 235 240

Arg Ile Ala Glu Gly Arg Pro Ser Phe Gln Trp Thr Arg Val Lys
245 250 255

Asn Thr His Ile Pro Lys Gly Trp Ala Arg Gly Gly Met Gly Asp
260 265 270

Ala Thr Leu Asp Tyr Asp Tyr Ala Leu Leu Glu Leu Lys Arg Ala
275 280 285

His Lys Lys Lys Tyr Met Glu Leu Gly Ile Ser Pro Thr Ile Lys
290 295 300

Lys Met Pro Gly Gly Met Ile His Phe Ser Gly Phe Asp Asn Asp
305 310 315

Arg Ala Asp Gln Leu Val Tyr Arg Phe Cys Ser Val Ser Asp Glu
320 325 330

Ser Asn Asp Leu Leu Tyr Gln Tyr Cys Asp Ala Glu Ser Gly Ser
335 340 345

Thr Gly Ser Gly Val Tyr Leu Arg Leu Lys Asp Pro Asp Lys Lys
350 355 360

Asn Trp Lys Arg Lys Ile Ile Ala Val Tyr Ser Gly His Gln Trp
365 370 375

Val Asp Val His Gly Val Gln Lys Asp Tyr Asn Val Ala Val Arg
380 385 390

Ile Thr Pro Leu Lys Tyr Ala Gln Ile Cys Leu Trp Ile His Gly
395 400 405

Asn Asp Ala Asn Cys Ala Tyr Gly
410

<210> 297

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 297

gcatctgcag gagagagcga aggg 24

<210> 298

<211> 24

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 298
catcggtccc gtgaatccag aggc 24

<210> 299
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 299
gaaggaggc cttcctttca gtggaccggt gtcaagaata cccac 45

<210> 300
<211> 1869
<212> DNA
<213> Homo sapiens

<400> 300
aatgtgagag gggctgatgg aagctgatag gcaggactgg agtgtttagca 50
ccagtactgg atgtgacagc aggcagagga gcacttagca gcttattcag 100
tgtccgattc tgattccggc aaggatccaa gcatggaatg ctgccgtcgg 150
gcaactcctg gcacactgct cctctttctg gctttcctgc tcctgagttc 200
caggaccgca cgctccgagg aggaccggga cggcctatgg gatgcctggg 250
gcccatggag tgaatgctca cgcacctgag ggggaggggc ctctactct 300
ctgaggcgct gcctgagcag caagagctgt gaaggaagaa atatccgata 350
cagaacatgc agtaatgtgg actgcccacc agaagcaggt gatttccgag 400
ctcagcaatg ctcagctcat aatgatgtca agcaccatgg ccagttttat 450
gaatggcttc ctgtgtctaa tgaccctgac aacccatgtt cactcaagtg 500
ccaagccaaa ggaacaaccc tgggtgttga actagcacct aaggtcttag 550
atggtacgag ttgctataca gaatctttgg atatgtgcat cagtggttta 600
tgccaaattg ttggctgoga tcaccagctg ggaagcaccg tcaaggaaga 650
taactgtggg gtctgcaacg gagatgggtc cacctgccgg ctggtccgag 700
ggcagtataa atcccagctc tccgcaacca aatcggatga tactgtggtt 750
gcatttcctt atggaagtag acatattcgc cttgtcttaa aaggtcctga 800
tcacttatat ctggaacca aaaccctcca ggggactaaa ggtgaaaaca 850
gtctcagctc cacaggaact ttccttgtgg acaattctag tgtggacttc 900

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Ser | Lys | Ser | Cys | Glu | Gly | Arg | Asn | Ile | Arg | Tyr | Arg | Thr | 65 | 70 | 75 |
| Cys | Ser | Asn | Val | Asp | Cys | Pro | Pro | Glu | Ala | Gly | Asp | Phe | Arg | Ala | 80 | 85 | 90 |
| Gln | Gln | Cys | Ser | Ala | His | Asn | Asp | Val | Lys | His | His | Gly | Gln | Phe | 95 | 100 | 105 |
| Tyr | Glu | Trp | Leu | Pro | Val | Ser | Asn | Asp | Pro | Asp | Asn | Pro | Cys | Ser | 110 | 115 | 120 |
| Leu | Lys | Cys | Gln | Ala | Lys | Gly | Thr | Thr | Leu | Val | Val | Glu | Leu | Ala | 125 | 130 | 135 |
| Pro | Lys | Val | Leu | Asp | Gly | Thr | Arg | Cys | Tyr | Thr | Glu | Ser | Leu | Asp | 140 | 145 | 150 |
| Met | Cys | Ile | Ser | Gly | Leu | Cys | Gln | Ile | Val | Gly | Cys | Asp | His | Gln | 155 | 160 | 165 |
| Leu | Gly | Ser | Thr | Val | Lys | Glu | Asp | Asn | Cys | Gly | Val | Cys | Asn | Gly | 170 | 175 | 180 |
| Asp | Gly | Ser | Thr | Cys | Arg | Leu | Val | Arg | Gly | Gln | Tyr | Lys | Ser | Gln | 185 | 190 | 195 |
| Leu | Ser | Ala | Thr | Lys | Ser | Asp | Asp | Thr | Val | Val | Ala | Leu | Pro | Tyr | 200 | 205 | 210 |
| Gly | Ser | Arg | His | Ile | Arg | Leu | Val | Leu | Lys | Gly | Pro | Asp | His | Leu | 215 | 220 | 225 |
| Tyr | Leu | Glu | Thr | Lys | Thr | Leu | Gln | Gly | Thr | Lys | Gly | Glu | Asn | Ser | 230 | 235 | 240 |
| Leu | Ser | Ser | Thr | Gly | Thr | Phe | Leu | Val | Asp | Asn | Ser | Ser | Val | Asp | 245 | 250 | 255 |
| Phe | Gln | Lys | Phe | Pro | Asp | Lys | Glu | Ile | Leu | Arg | Met | Ala | Gly | Pro | 260 | 265 | 270 |
| Leu | Thr | Ala | Asp | Phe | Ile | Val | Lys | Ile | Arg | Asn | Ser | Gly | Ser | Ala | 275 | 280 | 285 |
| Asp | Ser | Thr | Val | Gln | Phe | Ile | Phe | Tyr | Gln | Pro | Ile | Ile | His | Arg | 290 | 295 | 300 |
| Trp | Arg | Glu | Thr | Asp | Phe | Phe | Pro | Cys | Ser | Ala | Thr | Cys | Gly | Gly | 305 | 310 | 315 |
| Gly | Tyr | Gln | Leu | Thr | Ser | Ala | Glu | Cys | Tyr | Asp | Leu | Arg | Ser | Asn | 320 | 325 | 330 |
| Arg | Val | Val | Ala | Asp | Gln | Tyr | Cys | His | Tyr | Tyr | Pro | Glu | Asn | Ile | 335 | 340 | 345 |
| Lys | Pro | Lys | Pro | Lys | Leu | Gln | Glu | Cys | Asn | Leu | Asp | Pro | Cys | Pro | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 350 | 355 | 360 |
| Ala Ser Asp Gly Tyr Lys Gln Ile Met | Pro Tyr Asp Leu Tyr His | |
| 365 | 370 | 375 |
| Pro Leu Pro Arg Trp Glu Ala Thr Pro | Trp Thr Ala Cys Ser Ser | |
| 380 | 385 | 390 |
| Ser Cys Gly Gly Gly Ile Gln Ser Arg | Ala Val Ser Cys Val Glu | |
| 395 | 400 | 405 |
| Glu Asp Ile Gln Gly His Val Thr Ser | Val Glu Glu Trp Lys Cys | |
| 410 | 415 | 420 |
| Met Tyr Thr Pro Lys Met Pro Ile Ala | Gln Pro Cys Asn Ile Phe | |
| 425 | 430 | 435 |
| Asp Cys Pro Lys Trp Leu Ala Gln Glu | Trp Ser Pro Cys Thr Val | |
| 440 | 445 | 450 |
| Thr Cys Gly Gln Gly Leu Arg Tyr Arg | Val Val Leu Cys Ile Asp | |
| 455 | 460 | 465 |
| His Arg Gly Met His Thr Gly Gly Cys | Ser Pro Lys Thr Lys Pro | |
| 470 | 475 | 480 |
| His Ile Lys Glu Glu Cys Ile Val Pro | Thr Pro Cys Tyr Lys Pro | |
| 485 | 490 | 495 |
| Lys Glu Lys Leu Pro Val Glu Ala Lys | Leu Pro Trp Phe Lys Gln | |
| 500 | 505 | 510 |
| Ala Gln Glu Leu Glu Glu Gly Ala Ala | Val Ser Glu Glu Pro Ser | |
| 515 | 520 | 525 |

<210> 302
 <211> 1533
 <212> DNA
 <213> Homo sapiens

<400> 302
 cggacgcgtg ggcggcggct gcggaactcc cgtggagggg ccggtgggcc 50
 ctcgggcctg acagatggca gtggccactg cggcggcagt actggccgct 100
 ctgggcgggg cgctgtggct ggcggcccg cggttcgtgg ggcccagggt 150
 ccagcggctg cgagaggcg gggaccccg cctcatgcac gggaagactg 200
 tgctgatcac cggggcgaac agcggcctgg gccgcgccac ggccgccgag 250
 ctactgcgcc tgggagcgcg ggtgatcatg ggctgccggg accgcgcgcg 300
 cgccgaggag ggcgggggtc agctccgccg cgagctccgc caggccgcgg 350
 agtgccggcc agagcctggc gtcagcgggg tgggcgagct catagtccgg 400
 gagctggacc tcgcctcgct gcgctcgggt gcgccttct gccaggaaat 450

gctccaggaa gagcctaggc tggatgtctt gatcaataac gcagggatct 500
tccagtgtcc ttacatgaag actgaagatg ggtttgagat gcagttcgga 550
gtgaaccatc tggggcactt tctactcacc aatcttctcc ttggactcct 600
caaaagtcca gctcccagca ggattgtggt agtttcttcc aaactttata 650
aatacggaga catcaatttt gatgacttga acagtgaaca aagctataat 700
aaaagctttt gttatagccg gagcaaaactg gctaacattc tttttaccag 750
ggaactagcc cgccgcttag aaggcacaaa tgtcaccgtc aatgtgttgc 800
atcctggtat tgtacggaca aatctgggga ggcacataca cattccactg 850
ttggtcaaac cactcttcaa tttggtgtca tgggcttttt tcaaaaactcc 900
agtagaaggt gcccagactt ccatttattt ggcctcttca cctgaggtag 950
aaggagtgtc aggaagatac tttggggatt gtaaagagga agaactgttg 1000
cccaaagcta tggatgaatc tgttgcaaga aaactctggg atatcagtga 1050
agtgatgggt ggctgtctaa aataggaaca aggagtaaaa gagctgttta 1100
taaaactgca tatcagttat atctgtgatc aggaatggtg tggattgaga 1150
acttgttact tgaagaaaaa gaattttgat attggaatag cctgctaaga 1200
ggtacatgtg ggtattttgg agttactgaa aaattatttt tgggataaga 1250
gaatttcagc aaagatgttt taaatatata tagtaagtat aatgaataat 1300
aagtacaatg aaaaatacaa ttatattgta aaattataac tgggcaagca 1350
tggatgacat attaataatt gtcagaatta agtgactcaa agtgctatcg 1400
agaggttttt caagtatctt tgagtttcat ggccaaagtg ttaactagtt 1450
ttactacaat gtttgggtgt tgtgtggaaa ttatctgcct ggtgtgtgca 1500
cacaagtctt acttggaata aatttactgg tac 1533

<210> 303

<211> 336

<212> PRT

<213> Homo sapiens

<400> 303

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Val | Ala | Thr | Ala | Ala | Ala | Val | Leu | Ala | Ala | Leu | Gly | Gly |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Ala | Leu | Trp | Leu | Ala | Ala | Arg | Arg | Phe | Val | Gly | Pro | Arg | Val | Gln |
| | | | | 20 | | | | | 25 | | | | 30 | |
| Arg | Leu | Arg | Arg | Gly | Gly | Asp | Pro | Gly | Leu | Met | His | Gly | Lys | Thr |
| | | | | 35 | | | | | 40 | | | | 45 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Ile | Thr | Gly | Ala | Asn | Ser | Gly | Leu | Gly | Arg | Ala | Thr | Ala | 50 | 55 | 60 |
| Ala | Glu | Leu | Leu | Arg | Leu | Gly | Ala | Arg | Val | Ile | Met | Gly | Cys | Arg | 65 | 70 | 75 |
| Asp | Arg | Ala | Arg | Ala | Glu | Glu | Ala | Ala | Gly | Gln | Leu | Arg | Arg | Glu | 80 | 85 | 90 |
| Leu | Arg | Gln | Ala | Ala | Glu | Cys | Gly | Pro | Glu | Pro | Gly | Val | Ser | Gly | 95 | 100 | 105 |
| Val | Gly | Glu | Leu | Ile | Val | Arg | Glu | Leu | Asp | Leu | Ala | Ser | Leu | Arg | 110 | 115 | 120 |
| Ser | Val | Arg | Ala | Phe | Cys | Gln | Glu | Met | Leu | Gln | Glu | Glu | Pro | Arg | 125 | 130 | 135 |
| Leu | Asp | Val | Leu | Ile | Asn | Asn | Ala | Gly | Ile | Phe | Gln | Cys | Pro | Tyr | 140 | 145 | 150 |
| Met | Lys | Thr | Glu | Asp | Gly | Phe | Glu | Met | Gln | Phe | Gly | Val | Asn | His | 155 | 160 | 165 |
| Leu | Gly | His | Phe | Leu | Leu | Thr | Asn | Leu | Leu | Leu | Gly | Leu | Leu | Lys | 170 | 175 | 180 |
| Ser | Ser | Ala | Pro | Ser | Arg | Ile | Val | Val | Val | Ser | Ser | Lys | Leu | Tyr | 185 | 190 | 195 |
| Lys | Tyr | Gly | Asp | Ile | Asn | Phe | Asp | Asp | Leu | Asn | Ser | Glu | Gln | Ser | 200 | 205 | 210 |
| Tyr | Asn | Lys | Ser | Phe | Cys | Tyr | Ser | Arg | Ser | Lys | Leu | Ala | Asn | Ile | 215 | 220 | 225 |
| Leu | Phe | Thr | Arg | Glu | Leu | Ala | Arg | Arg | Leu | Glu | Gly | Thr | Asn | Val | 230 | 235 | 240 |
| Thr | Val | Asn | Val | Leu | His | Pro | Gly | Ile | Val | Arg | Thr | Asn | Leu | Gly | 245 | 250 | 255 |
| Arg | His | Ile | His | Ile | Pro | Leu | Leu | Val | Lys | Pro | Leu | Phe | Asn | Leu | 260 | 265 | 270 |
| Val | Ser | Trp | Ala | Phe | Phe | Lys | Thr | Pro | Val | Glu | Gly | Ala | Gln | Thr | 275 | 280 | 285 |
| Ser | Ile | Tyr | Leu | Ala | Ser | Ser | Pro | Glu | Val | Glu | Gly | Val | Ser | Gly | 290 | 295 | 300 |
| Arg | Tyr | Phe | Gly | Asp | Cys | Lys | Glu | Glu | Glu | Leu | Leu | Pro | Lys | Ala | 305 | 310 | 315 |
| Met | Asp | Glu | Ser | Val | Ala | Arg | Lys | Leu | Trp | Asp | Ile | Ser | Glu | Val | 320 | 325 | 330 |
| Met | Val | Gly | Leu | Leu | Lys | | | | | | | | | | | | |

<210> 304
 <211> 521
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 20, 34, 62, 87, 221, 229
 <223> unknown base

<400> 304
 ggggattgta aagaggaagn actgtgcccc aagntatgga tgaatctgtt 50
 gcaagaaaat tntgggatat cagtgaagtg atgggtngcc tgctaaaata 100
 ggaacaagga gtaaaagagc tgtttataaa actgcatatc agttatatct 150
 gtgatcagga atgggtgtgga ttgagaactt gttacttgaa gaaaaagaat 200
 tttgatattg gaatagcctg ntaagaggna catgtgggta ttttgagatt 250
 actgaaaaat tttttttggg ataagagaat ttcagcaaag atgtttttaa 300
 tatatatagt aagtataatg aataataagt acaatgaaaa atacaattat 350
 attgtaaaat tataactggg caagcatgga tgacatatta atatttgtca 400
 gaattaagtg actcaaagtg ctatcgagag gtttttcaag tatctttgag 450
 tttcatggcc aaagtgttaa ctagttttac tacaatgttt ggtgtttgtg 500
 tggaattat ctgcctggct t 521

<210> 305
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 305
 ccaggaaatg ctccaggaag agcc 24

<210> 306
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 306
 gcccatgaca ccaaattgaa gagtgg 26

<210> 307

<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 307
aacgcaggga tcttccagtg cccttacatg aagactgaag atggg 45

<210> 308
<211> 1523
<212> DNA
<213> Homo sapiens

<400> 308
gagaggacga ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 50
cggagcccag ccctttccta acccaaccca acctagccca gtcccagccg 100
ccagcgcttg tccctgtcac ggaccccagc gttaccatgc atcctgcctg 150
cttctatcc ttacccgacc tcagatgctc ctttctgctc ctggtaactt 200
gggtttttac tcctgtaaca actgaaataa caagtcttgc tacagagaat 250
atagatgaaa ttttaaaca tgctgatgtt gctttagtaa atttttatgc 300
tgactggtgt cgtttcagtc agatgttgca tccaattttt gaggaagctt 350
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 400
agagttgatt gtgatcagca ctctgacata gccagagat acaggataag 450
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 500
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggcaa 550
caaaaaagtg accccattca agaaattcgg gacttagcag aaatcaccac 600
tcttgatcgc agcaaaagaa atatcattgg atattttgag caaaaaggact 650
cggacaacta tagagttttt gaacgagtag cgaatatttt gcatgatgac 700
tgtgcctttc tttctgcatt tggggatgtt tcaaaaccgg aaagatatag 750
tggcgacaac ataatctaca aaccaccagg gcattctgct ccggatatgg 800
tgtacttggg agctatgaca aattttgatg tgacttaca ttggattcaa 850
gataaatgtg ttcctcttgt ccgagaaata acatttgaaa atggagagga 900
attgacagaa gaaggactgc cttttctcat actctttcac atgaaagaag 950
atacagaaag tttagaaata ttccagaatg aagtagctcg gcaattaata 1000
agtgaaaaag gtacaataaa ctttttacat gccgattgtg acaaatttag 1050

acatcctctt ctgcacatac agaaaactcc agcagattgt cctgtaatcg 1100
 ctattgacag ctttaggcac atgtatgtgt ttggagactt caaagatgta 1150
 ttaattcctg gaaaactcaa gcaattcgta tttgacttac attctggaaa 1200
 actgcacaga gaattccatc atggacctga cccaactgat acagccccag 1250
 gagagcaagc ccaagatgta gcaagcagtc cacctgagag ctccttccag 1300
 aaactagcac ccagtgaata taggtatact ctattgaggg atcgagatga 1350
 gctttaaaaa cttgaaaaac agtttgtaag cctttcaaca gcagcatcaa 1400
 cctacgtggg ggaaatagta aacctatatt ttcataattc tatgtgtatt 1450
 tttattttga ataaacagaa agaaatttaa aaaaaaaaaa aaaaaaaaaa 1500
 aaaaaaaaaa aaaaaaaaaa aaa 1523

<210> 309

<211> 406

<212> PRT

<213> Homo sapiens

<400> 309

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | His | Pro | Ala | Val | Phe | Leu | Ser | Leu | Pro | Asp | Leu | Arg | Cys | Ser | 1 | 5 | 10 | 15 |
| Leu | Leu | Leu | Leu | Val | Thr | Trp | Val | Phe | Thr | Pro | Val | Thr | Thr | Glu | 20 | 25 | 30 | |
| Ile | Thr | Ser | Leu | Ala | Thr | Glu | Asn | Ile | Asp | Glu | Ile | Leu | Asn | Asn | 35 | 40 | 45 | |
| Ala | Asp | Val | Ala | Leu | Val | Asn | Phe | Tyr | Ala | Asp | Trp | Cys | Arg | Phe | 50 | 55 | 60 | |
| Ser | Gln | Met | Leu | His | Pro | Ile | Phe | Glu | Glu | Ala | Ser | Asp | Val | Ile | 65 | 70 | 75 | |
| Lys | Glu | Glu | Phe | Pro | Asn | Glu | Asn | Gln | Val | Val | Phe | Ala | Arg | Val | 80 | 85 | 90 | |
| Asp | Cys | Asp | Gln | His | Ser | Asp | Ile | Ala | Gln | Arg | Tyr | Arg | Ile | Ser | 95 | 100 | 105 | |
| Lys | Tyr | Pro | Thr | Leu | Lys | Leu | Phe | Arg | Asn | Gly | Met | Met | Met | Lys | 110 | 115 | 120 | |
| Arg | Glu | Tyr | Arg | Gly | Gln | Arg | Ser | Val | Lys | Ala | Leu | Ala | Asp | Tyr | 125 | 130 | 135 | |
| Ile | Arg | Gln | Gln | Lys | Ser | Asp | Pro | Ile | Gln | Glu | Ile | Arg | Asp | Leu | 140 | 145 | 150 | |
| Ala | Glu | Ile | Thr | Thr | Leu | Asp | Arg | Ser | Lys | Arg | Asn | Ile | Ile | Gly | 155 | 160 | 165 | |

<222> 36, 48
<223> unknown base

<400> 310
attaaggaag aattttccaaa tgaaaatcaa gtagtntttg ccagagtnga 50
ttgtgatcag cactctgaca tagcccagag atacaggata agcaaatacc 100
caaccctcaa attgtttcgt aatgggatga tgatgaagag agaatacagg 150
ggtcagcgat cagtgaagc attggcagat ta 182

<210> 311
<211> 598
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 38, 59, 140, 169, 174, 183, 282-283, 294-295, 319, 396
<223> unknown base

<400> 311
agaggcctct ctggaagttg tcccgggtgt tgcgcgngg agcccgggtc 50
gagaggacna ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 100
cggagcccag ccctttccta acccaaccca acctagcccn gtcccagccg 150
ccagcgctg tccctgtcnc gganccagc gtnaccatgc atcctgccgt 200
cttcctatcc ttacccgacc tcagatgctc ccttotgctc ctggtaactt 250
gggtttttac tcctgtaaca actgaaataa cnngtcttga tacnnagaat 300
atagatgaaa ttttaaacna tgctgatgtg gcttttagtca atttttatgc 350
tgactggtgt cgtttcagtc agatgtggca tccaattttt gaggangctt 400
ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 450
agagttgatt gtgatcagca ctctgacata gccagagat acaggataag 500
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 550
aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggc 598

<210> 312
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 312
tgagaggcct ctctggaagt tg 22

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 318

ctgtatctct gggctatgtc agag 24

<210> 319

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 319

ctacatataa tggcacatgt cagcc 25

<210> 320

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 320

cgtcttccta tccttaccgc acctcagatg ctcccttctg ctctg 46

<210> 321

<211> 1333

<212> DNA

<213> Homo sapiens

<400> 321

gcccacgcgt ccgatggcgt tcacgttcgc ggccttctgc tacatgctgg 50

cgctgctgct cactgccgcg ctcatcttct tcgccatttg gcacattata 100

gcatttgatg agctgaagac tgattacaag aatcctatag accagtgtaa 150

tacctgaat ccccttgtag tccagagta cctcatccac gctttcttct 200

gtgtcatgtt tctttgtgca gcagagtggc ttacactggg tctcaatatg 250

cccctcttgg catatcatat ttggagggtat atgagtagac cagtgatgag 300

tggcccagga ctctatgacc ctacaaccat catgaatgca gatattctag 350

catattgtca gaaggaagga tgggtgcaaat tagcttttta tcttctagca 400

tttttttact acctatatgg catgatctat gttttggtga gctcttagaa 450

caacacacag aagaattggc ccagttaagt gcatgcaaaa agccaccaa 500

tgaagggatt ctatccagca agatcctgtc caagagtagc ctgtggaatc 550

Ile Met Asn Ala Asp Ile Leu Ala Tyr Cys Gln Lys Glu Gly Trp
 110 115 120
 Cys Lys Leu Ala Phe Tyr Leu Leu Ala Phe Phe Tyr Tyr Leu Tyr
 125 130 135
 Gly Met Ile Tyr Val Leu Val Ser Ser
 140

<210> 323
 <211> 477
 <212> DNA
 <213> Homo sapiens

<400> 323
 attatagcat ttgatgagct gaagactgat tacaagatcc tatagaccag 50
 tgtaataccc tgaatcccct tgtactccca gagtacctca tccacgcttt 100
 cttctgtgtc atgtttcttt gtgcagcaga gtggcttaca ctgggtctca 150
 atatgcccct cttggcatat catatttgga ggtatatgag tagaccagtg 200
 atgagtggcc caggactcta tgaccctaca accatcatga atgcagatat 250
 tctagcatat tgtcagaagg aaggatgggtg caaattagct ttttatcttc 300
 tagcattttt ttactaccta tatggcatga tctatgtttt ggtgagctct 350
 tagaacaaca cacagaagaa ttggtccagt taagtgcattg caaaaagcca 400
 ccaaatgaag ggattctatc cagcaagatc ctgtccaaga gtagcctgtg 450
 gaatctgatc agttacttta aaaaatg 477

<210> 324
 <211> 43
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 324
 tgtaaaacga cggccagtta aatagacctg caattattaa tct 43

<210> 325
 <211> 41
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 325
 caggaaacag ctatgaccac ctgcacacct gcaaatccat t 41

<210> 326

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 326
gtgcagcaga gtggcttaca 20

<210> 327
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 327
actggaccaa ttctttctgtg 20

<210> 328
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 328
gatattctag catattgtca gaaggaagga tgggtgcaa tagct 45

<210> 329
<211> 1174
<212> DNA
<213> Homo sapiens

<400> 329
cggacgcgtg ggggaaaccc ttccgagaaa acagcaacaa gctgagctgc 50
tgtgacagag gggaacaaga tggcggcgcc gaaggggagc ctctgggtga 100
ggacccaact ggggctcccg ccgctgctgc tgctgaccat ggccttggcc 150
ggaggttcgg ggaccgcttc ggctgaagca tttgactcgg tcttgggtga 200
tacggcgtct tgccaccggg cctgtcagtt gacctacccc ttgcacacct 250
accctaagga agaggagttg tacgcatgtc agagagggtg caggctgttt 300
tcaatttgtc agtttgtgga tgatggaatt gacttaaadc gaactaaatt 350
ggaatgtgaa tctgcatgta cagaagcata ttcccaatct gatgagcaat 400
atgcttgcca tcttggttgc cagaatcagc tgccattcgc tgaactgaga 450
caagaacaac ttatgtccct gatgccaaaa atgcacctac tctttcctct 500

aactctggtg aggtcattct ggagtgcacat gatggactcc gcacagagct 550
tcataacctc ttcattggact ttttatcttc aagccgatga cggaaaaata 600
gttatattcc agtctaagcc agaaatccag tacgcaccac atttgagca 650
ggagcctaca aatttgagag aatcatctct aagcaaatg tcctatctgc 700
aaatgagaaa ttcacaagcg cacaggaatt ttcttgaaga tggagaaagt 750
gatggctttt taagatgcct ctctcttaac tctgggtgga ttttaactac 800
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ttgctacagc tgtggagcag tatgttcctt ctgagaagct gagtatctat 900
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ttttaaaaga caagtgtaat agacatctaa aattccactc ctcatagagc 1100
ttttaaaatg gtttcattgg atataggcct taagaaatca ctataaaatg 1150
caaataaagt tactcaaatc tgtg 1174

<210> 330

<211> 323

<212> PRT

<213> Homo sapiens

<400> 330

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Ala | Pro | Lys | Gly | Ser | Leu | Trp | Val | Arg | Thr | Gln | Leu | Gly | 1 | 5 | 10 | 15 |
| Leu | Pro | Pro | Leu | Leu | Leu | Leu | Thr | Met | Ala | Leu | Ala | Gly | Gly | Ser | 20 | 25 | 30 | |
| Gly | Thr | Ala | Ser | Ala | Glu | Ala | Phe | Asp | Ser | Val | Leu | Gly | Asp | Thr | 35 | 40 | 45 | |
| Ala | Ser | Cys | His | Arg | Ala | Cys | Gln | Leu | Thr | Tyr | Pro | Leu | His | Thr | 50 | 55 | 60 | |
| Tyr | Pro | Lys | Glu | Glu | Glu | Leu | Tyr | Ala | Cys | Gln | Arg | Gly | Cys | Arg | 65 | 70 | 75 | |
| Leu | Phe | Ser | Ile | Cys | Gln | Phe | Val | Asp | Asp | Gly | Ile | Asp | Leu | Asn | 80 | 85 | 90 | |
| Arg | Thr | Lys | Leu | Glu | Cys | Glu | Ser | Ala | Cys | Thr | Glu | Ala | Tyr | Ser | 95 | 100 | 105 | |
| Gln | Ser | Asp | Glu | Gln | Tyr | Ala | Cys | His | Leu | Gly | Cys | Gln | Asn | Gln | 110 | 115 | 120 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Pro | Phe | Ala | Glu | Leu | Arg | Gln | Glu | Gln | Leu | Met | Ser | Leu | Met | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Pro | Lys | Met | His | Leu | Leu | Phe | Pro | Leu | Thr | Leu | Val | Arg | Ser | Phe | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Trp | Ser | Asp | Met | Met | Asp | Ser | Ala | Gln | Ser | Phe | Ile | Thr | Ser | Ser | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Trp | Thr | Phe | Tyr | Leu | Gln | Ala | Asp | Asp | Gly | Lys | Ile | Val | Ile | Phe | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gln | Ser | Lys | Pro | Glu | Ile | Gln | Tyr | Ala | Pro | His | Leu | Glu | Gln | Glu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Pro | Thr | Asn | Leu | Arg | Glu | Ser | Ser | Leu | Ser | Lys | Met | Ser | Tyr | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Gln | Met | Arg | Asn | Ser | Gln | Ala | His | Arg | Asn | Phe | Leu | Glu | Asp | Gly | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Glu | Ser | Asp | Gly | Phe | Leu | Arg | Cys | Leu | Ser | Leu | Asn | Ser | Gly | Trp | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ile | Leu | Thr | Thr | Thr | Leu | Val | Leu | Ser | Val | Met | Val | Leu | Leu | Trp | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Ile | Cys | Cys | Ala | Thr | Val | Ala | Thr | Ala | Val | Glu | Gln | Tyr | Val | Pro | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ser | Glu | Lys | Leu | Ser | Ile | Tyr | Gly | Asp | Leu | Glu | Phe | Met | Asn | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Gln | Lys | Leu | Asn | Arg | Tyr | Pro | Ala | Ser | Ser | Leu | Val | Val | Val | Arg | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Ser | Lys | Thr | Glu | Asp | His | Glu | Glu | Ala | Gly | Pro | Leu | Pro | Thr | Lys | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Val | Asn | Leu | Ala | His | Ser | Glu | Ile | | | | | | | | |
| | | | | 320 | | | | | | | | | | | |

<210> 331
 <211> 350
 <212> DNA
 <213> Homo sapiens

<400> 331
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 ggctgttttc aatttgtcag tttgtggatg atggaattga cttaaatcga 150
 actaaattgg aatgtgaatc tgcattgtaca gaagcatatt cccaatctga 200
 tgagcaatat gcttgccatc ttggttgcca gaatcagctg ccattcgctg 250

aactgagaca agaacaactt atgtccctga tgccaaaaat gcacctactc 300
 tttcctctaa ctctgggtgag gtcattctgg agtgacatga tggactccgc 350

<210> 332
 <211> 562
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 47
 <223> unknown base

<400> 332
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 aaacagcaac aagctgagct gctgtgacag agggaacaag atggcggcgc 100
 cgaagggagc ctttgggtga ggacccaact ggggctcccg ccgctgctgc 150
 tgctgaccat ggccttggcc ggaggttcgg ggaccgcttc ggctgaagca 200
 tttgactcgg tcttgggtga tacggcgtct tgccaccggg cctgtcagtt 250
 gacctacccc ttgcacacct accctaagga agaggagttg tacgcatgtc 300
 agagaggttg caggctgttt tcaatttgtc agtttgtgga tgatggaatt 350
 gacttaaadc gaactaaatt ggaatgtgaa tctgcatgta cagaagcata 400
 ttcccaatct gatgagcaat atgcttgcca tcttggttgc cagaatcagc 450
 tgccattcgc tgaactgaga caagaacaac ttatgtccct gatgccaaaa 500
 atgcacctac tctttcctct aactctggtg aggtcattct ggagtgcacat 550
 gatggactcc gc 562

<210> 333
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 333
 acaagctgag ctgctgtgac ag 22

<210> 334
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 334
tgattctggc aaccaagatg gc 22

<210> 335

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 335

atggccttgg ccggagggttc ggggaccgct tcggctgaag 40

<210> 336

<211> 1885

<212> DNA

<213> Homo sapiens

<400> 336

gcgaggtggc gatcgctgag aggcaggagg gccgaggcgg gcctgggagg 50
cggcccgagg gtggggcgcc gctggggcgg gcccgcacgg gcttcatctg 100
agggcgcacg gcccgcgacc gagcgtgcgg actggcctcc caagcgtggg 150
gcgacaagct gccggagctg caatgggccc cggctgggga ttcttgtttg 200
gcctcctggg cgccgtgttg ctgctcagct cgggccacgg agaggagcag 250
cccccggaga cagcggcaca gaggtgcttc tgccagggtta gtggttactt 300
ggatgattgt acctgtgatg ttgaaacat tgatagattt aataactaca 350
ggcttttccc aagactacaa aaacttcttg aaagtgacta ctttaggtat 400
tacaaggtaa acctgaagag gccgtgtcct ttctggaatg acatcagcca 450
gtgtggaaga agggactgtg ctgtcaaacc atgtcaatct gatgaagttc 500
ctgatggaat taaatctgcg agctacaagt attctgaaga agccaataat 550
ctcattgaag aatgtgaaca agctgaacga cttggagcag tggatgaatc 600
totgagtgag gaaacacaga aggctgttct tcagtggacc aagcatgatg 650
attcttcaga taacttctgt gaagctgatg acattcagtc ccctgaagct 700
gaatatgtag atttgcttct taatcctgag cgctacactg gttacaaggg 750
accagatgct tggaaaatat ggaatgtcat ctacgaagaa aactgtttta 800
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 tttcaactct ttactggaaa taaaattcag gatgaggaaa acaaaatggt 1200
 acttctggaa atacttcatg aaatcaagtc atttcctttg cattttgatg 1250
 agaattcatt ttttgctggg gataaaaaag aagcacacaa actaaaggag 1300
 gactttcgac tgcattttag aaatatattca agaattatgg attgtgttgg 1350
 ttgttttaaa tgtcgtctgt ggggaaagct tcagactcag ggtttgggca 1400
 ctgctctgaa gatcttattt tctgagaaat tgatagcaaa tatgccagaa 1450
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 tcaggaaactt gttacagaat attcattaaa gaaaacaagc tgatatgtgc 1600
 ctgtttctgg acaatggagg cgaaagagtg gaatttcatt caaaggcata 1650
 atagcaatga cagtcttaag ccaaacattt tatataaagt tgcttttgta 1700
 aaggagaatt atattgtttt aagtaaacac attttttaaa attgtgttaa 1750
 gtctatgtat aatactactg tgagtaaaag taatacttta ataatgtggt 1800
 acaaatttta aagtttaata ttgaataaaa ggaggattat caaattaaaa 1850
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa 1885

<210> 337

<211> 468

<212> PRT

<213> Homo sapiens

<400> 337

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Gly | Trp | Gly | Phe | Leu | Phe | Gly | Leu | Leu | Gly | Ala | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Trp | Leu | Leu | Ser | Ser | Gly | His | Gly | Glu | Glu | Gln | Pro | Pro | Glu | Thr |
| | | | 20 | | | | | 25 | | | | | | 30 |
| Ala | Ala | Gln | Arg | Cys | Phe | Cys | Gln | Val | Ser | Gly | Tyr | Leu | Asp | Asp |
| | | | 35 | | | | | 40 | | | | | | 45 |
| Cys | Thr | Cys | Asp | Val | Glu | Thr | Ile | Asp | Arg | Phe | Asn | Asn | Tyr | Arg |
| | | | 50 | | | | | 55 | | | | | | 60 |
| Leu | Phe | Pro | Arg | Leu | Gln | Lys | Leu | Leu | Glu | Ser | Asp | Tyr | Phe | Arg |
| | | | 65 | | | | | 70 | | | | | | 75 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Tyr | Lys | Val | Asn | Leu | Lys | Arg | Pro | Cys | Pro | Phe | Trp | Asn | Asp | 80 | 85 | 90 |
| Ile | Ser | Gln | Cys | Gly | Arg | Arg | Asp | Cys | Ala | Val | Lys | Pro | Cys | Gln | 95 | 100 | 105 |
| Ser | Asp | Glu | Val | Pro | Asp | Gly | Ile | Lys | Ser | Ala | Ser | Tyr | Lys | Tyr | 110 | 115 | 120 |
| Ser | Glu | Glu | Ala | Asn | Asn | Leu | Ile | Glu | Glu | Cys | Glu | Gln | Ala | Glu | 125 | 130 | 135 |
| Arg | Leu | Gly | Ala | Val | Asp | Glu | Ser | Leu | Ser | Glu | Glu | Thr | Gln | Lys | 140 | 145 | 150 |
| Ala | Val | Leu | Gln | Trp | Thr | Lys | His | Asp | Asp | Ser | Ser | Asp | Asn | Phe | 155 | 160 | 165 |
| Cys | Glu | Ala | Asp | Asp | Ile | Gln | Ser | Pro | Glu | Ala | Glu | Tyr | Val | Asp | 170 | 175 | 180 |
| Leu | Leu | Leu | Asn | Pro | Glu | Arg | Tyr | Thr | Gly | Tyr | Lys | Gly | Pro | Asp | 185 | 190 | 195 |
| Ala | Trp | Lys | Ile | Trp | Asn | Val | Ile | Tyr | Glu | Glu | Asn | Cys | Phe | Lys | 200 | 205 | 210 |
| Pro | Gln | Thr | Ile | Lys | Arg | Pro | Leu | Asn | Pro | Leu | Ala | Ser | Gly | Gln | 215 | 220 | 225 |
| Gly | Thr | Ser | Glu | Glu | Asn | Thr | Phe | Tyr | Ser | Trp | Leu | Glu | Gly | Leu | 230 | 235 | 240 |
| Cys | Val | Glu | Lys | Arg | Ala | Phe | Tyr | Arg | Leu | Ile | Ser | Gly | Leu | His | 245 | 250 | 255 |
| Ala | Ser | Ile | Asn | Val | His | Leu | Ser | Ala | Arg | Tyr | Leu | Leu | Gln | Glu | 260 | 265 | 270 |
| Thr | Trp | Leu | Glu | Lys | Lys | Trp | Gly | His | Asn | Ile | Thr | Glu | Phe | Gln | 275 | 280 | 285 |
| Gln | Arg | Phe | Asp | Gly | Ile | Leu | Thr | Glu | Gly | Glu | Gly | Pro | Arg | Arg | 290 | 295 | 300 |
| Leu | Lys | Asn | Leu | Tyr | Phe | Leu | Tyr | Leu | Ile | Glu | Leu | Arg | Ala | Leu | 305 | 310 | 315 |
| Ser | Lys | Val | Leu | Pro | Phe | Phe | Glu | Arg | Pro | Asp | Phe | Gln | Leu | Phe | 320 | 325 | 330 |
| Thr | Gly | Asn | Lys | Ile | Gln | Asp | Glu | Glu | Asn | Lys | Met | Leu | Leu | Leu | 335 | 340 | 345 |
| Glu | Ile | Leu | His | Glu | Ile | Lys | Ser | Phe | Pro | Leu | His | Phe | Asp | Glu | 350 | 355 | 360 |
| Asn | Ser | Phe | Phe | Ala | Gly | Asp | Lys | Lys | Glu | Ala | His | Lys | Leu | Lys | | | |

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 339
 aagctgccgg agctgcaatg 20

 <210> 340
 <211> 21
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 340
 ttgcttctta atcctgagcg c 21

 <210> 341
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 341
 aaaggaggac tttcgactgc 20

 <210> 342
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 342
 agagattcat ccactgctcc aagtcg 26

 <210> 343
 <211> 25
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 343
 tgtccagaaa caggcacata tcagc 25

 <210> 344
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 344

agacagcggc acagaggtgc ttctgccagg ttagtggtta cttggatgat 50

<210> 345

<211> 1486

<212> DNA

<213> Homo sapiens

<400> 345

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gatgggaggg aaagtgaaga aaacagaaaa ggagagggac agaggccaga 100
ggactttctca tactggacag aaaccgatca ggcatggaac tccccttcgt 150
cactcacctg ttcttgcccc tgggtgtcct gacaggtctc tgctccccct 200
ttaacctgga tgaacatcac ccacgcctat tcccagggcc accagaagct 250
gaatttggat acagtgtctt acaacatgtt gggggtggac agcgatggat 300
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tttatcgctg ccctgtaggg ggggcccaca atgccccatg tgccaagggc 400
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 aaaataataa taataataat tcagactcct tatcaggagt ccatgatctg 1350
 gcctggcaca gtaactcatg cctgtaatcc caacattttg ggaggccaac 1400
 gcaggaggat tgcttgaggt ctggagggtt gagaccagcc tgggcaacat 1450
 agaaagaccc catctctaaa taaatgtttt aaaaat 1486

<210> 346
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 346
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 1 5 10 15
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 20 25 30
 Arg Leu Phe Pro Gly Pro Pro Glu Ala Glu Phe Gly Tyr Ser Val
 35 40 45
 Leu Gln His Val Gly Gly Gly Gln Arg Trp Met Leu Val Gly Ala
 50 55 60
 Pro Trp Asp Gly Pro Ser Gly Asp Arg Arg Gly Asp Val Tyr Arg
 65 70 75
 Cys Pro Val Gly Gly Ala His Asn Ala Pro Cys Ala Lys Gly His
 80 85 90
 Leu Gly Asp Tyr Gln Leu Gly Asn Ser Ser His Pro Ala Val Asn
 95 100 105
 Met His Leu Gly Met Ser Leu Leu Glu Thr Asp Gly Asp Gly Gly
 110 115 120
 Phe Met Val Ser

<210> 347
 <211> 509
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 22
 <223> unknown base

<400> 347

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 ggcatggaac tccccttcgt cactcacctg ttcttgcccc tgggtgttct 200
 gacaggtctc tgctccccct ttaacctgga tgaacatcac ccacgcctat 250
 tcccagggcc accagaagct gaatttggat acagtgtott acaacatgtt 300
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 aggcgaccgg aggggggacg tttatcgctg ccctgtaggg gggggccaca 400
 atgccccatg tgccaagggc cacttaggtg actaccaact gggaaattca 450
 tctcatcctg ctgtgaatat gcacctgggg atgtctctgt tagagacaga 500
 tggatgatgg 509

<210> 348
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 348
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<210> 349
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 349
 caggtgcata ttcacagcag gatg 24

<210> 350
 <211> 45
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 350
 ggaactcccc ttctgctact acctgttctt gcccttggtg ttcct 45

<210> 351
 <211> 2056
 <212> DNA

<213> Homo sapiens

<400> 351

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gcttcctggg ccggctctag aacaattcag gcttcgctgc gactcagacc 150
tcagctccaa catatgcatt ctgaagaaag atggctgaga tggacagaat 200
gctttatttt ggaaagaaac aatgttctag gtcaaactga gtctaccaa 250
tgcagacttt cacaatgggt ctagaagaaa tctggacaag tcttttcatg 300
tggtttttct acgcattgat tccatgtttg ctcacagatg aagtggccat 350
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gtcgaatacc agggggagta cgagagcctg tacacgagcc acatctggat 500
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atgacatcac ggccactgtg ccatacaacc ttcgtgtcag ggccacattg 600
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<211> 311

<212> PRT

<213> Homo sapiens

<400> 352

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| Met | Gln | Thr | Phe | Thr | Met | Val | Leu | Glu | Glu | Ile | Trp | Thr | Ser | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Phe | Met | Trp | Phe | Phe | Tyr | Ala | Leu | Ile | Pro | Cys | Leu | Leu | Thr | Asp |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Glu | Val | Ala | Ile | Leu | Pro | Ala | Pro | Gln | Asn | Leu | Ser | Val | Leu | Ser |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Thr | Asn | Met | Lys | His | Leu | Leu | Met | Trp | Ser | Pro | Val | Ile | Ala | Pro |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Gly | Glu | Thr | Val | Tyr | Tyr | Ser | Val | Glu | Tyr | Gln | Gly | Glu | Tyr | Glu |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Ser | Leu | Tyr | Thr | Ser | His | Ile | Trp | Ile | Pro | Ser | Ser | Trp | Cys | Ser |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Leu | Thr | Glu | Gly | Pro | Glu | Cys | Asp | Val | Thr | Asp | Asp | Ile | Thr | Ala |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Thr | Val | Pro | Tyr | Asn | Leu | Arg | Val | Arg | Ala | Thr | Leu | Gly | Ser | Gln |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ser | Ala | Trp | Ser | Ile | Leu | Lys | His | Pro | Phe | Asn | Arg | Asn | Ser | 125 | 130 | 135 |
| Thr | Ile | Leu | Thr | Arg | Pro | Gly | Met | Glu | Ile | Thr | Lys | Asp | Gly | Phe | 140 | 145 | 150 |
| His | Leu | Val | Ile | Glu | Leu | Glu | Asp | Leu | Gly | Pro | Gln | Phe | Glu | Phe | 155 | 160 | 165 |
| Leu | Val | Ala | Tyr | Trp | Arg | Arg | Glu | Pro | Gly | Ala | Glu | Glu | His | Val | 170 | 175 | 180 |
| Lys | Met | Val | Arg | Ser | Gly | Gly | Ile | Pro | Val | His | Leu | Glu | Thr | Met | 185 | 190 | 195 |
| Glu | Pro | Gly | Ala | Ala | Tyr | Cys | Val | Lys | Ala | Gln | Thr | Phe | Val | Lys | 200 | 205 | 210 |
| Ala | Ile | Gly | Arg | Tyr | Ser | Ala | Phe | Ser | Gln | Thr | Glu | Cys | Val | Glu | 215 | 220 | 225 |
| Val | Gln | Gly | Glu | Ala | Ile | Pro | Leu | Val | Leu | Ala | Leu | Phe | Ala | Phe | 230 | 235 | 240 |
| Val | Gly | Phe | Met | Leu | Ile | Leu | Val | Val | Val | Pro | Leu | Phe | Val | Trp | 245 | 250 | 255 |
| Lys | Met | Gly | Arg | Leu | Leu | Gln | Tyr | Ser | Cys | Cys | Pro | Val | Val | Val | 260 | 265 | 270 |
| Leu | Pro | Asp | Thr | Leu | Lys | Ile | Thr | Asn | Ser | Pro | Gln | Lys | Leu | Ile | 275 | 280 | 285 |
| Ser | Cys | Arg | Arg | Glu | Glu | Val | Asp | Ala | Cys | Ala | Thr | Ala | Val | Met | 290 | 295 | 300 |
| Ser | Pro | Glu | Glu | Leu | Leu | Arg | Ala | Trp | Ile | Ser | | | | | 305 | 310 | |

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 <213> Homo sapiens

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 <222> 654, 711, 748, 827
 <223> unknown base

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 tagacctcag ctccaacata tgcattctga agaaagatgg ctgagatgac 150
 agaatgcttt attttggaaa gaaacaatgt tctaggtcaa actgagtcta 200

ccaaatgcag actttcacaa tggttctaga agaaatctgg acaagtcttt 250
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 attctgtcga ataccagggg gagtacgaga gcctgtacac gagccacatc 450
 tggatcccca gcagctgggt ctactcact gaaggtcctg agtgtgatgt 500
 cactgatgac atcacggcca ctgtgccata caacctttgt gtcagggcca 550
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 ttgtggccta ntggaggagg ggcgaacccc ttgcggcgca aggggttngc 750
 gaaccccttg cggccgctgg ggtatctctc gagaaaagag aggcccaata 800
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 ggcgctgggt tgat 864

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- <211> 23
- <212> DNA
- <213> Artificial Sequence
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- <223> Synthetic oligonucleotide probe
- <400> 354
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- <210> 355
- <211> 24
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe
- <400> 355
- ccaggtcggg taaggatggt tgag 24
- <210> 356
- <211> 50
- <212> DNA
- <213> Artificial Sequence
- <220>
- <223> Synthetic oligonucleotide probe

<400> 356
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<210> 357
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 <212> DNA
 <213> Homo sapiens

<400> 357
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 gctgagagga gtaggaagat caggagctag agggagactg gagggttccg 350
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 aagagtgggt ttgaagggcg gatctcagtc cctggctgct ttggcatttg 450
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| | | | | | |
|---|-----|--|-----|--|-----|
| | 170 | | 175 | | 180 |
| Leu Ala Ile Leu Ser Leu Phe Val Asn Val Ala Ser Thr Ser Asn | | | | | |
| | 185 | | 190 | | 195 |
| Pro Phe Leu Ser Arg Leu Leu Asn Arg Asp Thr Ile Thr Arg Ile | | | | | |
| | 200 | | 205 | | 210 |
| Ser Tyr Lys Asn Asp Ala Tyr Phe Leu Gln Asp Leu Ser Leu Glu | | | | | |
| | 215 | | 220 | | 225 |
| Leu Leu Phe Pro Glu Ser Phe Gly Phe Ile Thr Tyr Gln Gly Ser | | | | | |
| | 230 | | 235 | | 240 |
| Leu Ser Thr Pro Pro Cys Ser Glu Thr Val Thr Trp Ile Leu Ile | | | | | |
| | 245 | | 250 | | 255 |
| Asp Arg Ala Leu Asn Ile Thr Ser Leu Gln Met His Ser Leu Arg | | | | | |
| | 260 | | 265 | | 270 |
| Leu Leu Ser Gln Asn Pro Pro Ser Gln Ile Phe Gln Ser Leu Ser | | | | | |
| | 275 | | 280 | | 285 |
| Gly Asn Ser Arg Pro Leu Gln Pro Leu Ala His Arg Ala Leu Arg | | | | | |
| | 290 | | 295 | | 300 |
| Gly Asn Arg Asp Pro Arg His Pro Glu Arg Arg Cys Arg Gly Pro | | | | | |
| | 305 | | 310 | | 315 |
| Asn Tyr Arg Leu His Val Asp Gly Val Pro His Gly Arg | | | | | |
| | 320 | | 325 | | |

<210> 359

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 359

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<210> 360

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 360

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<210> 361

<211> 50

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<210> 362
<211> 3038
<212> DNA

<213> Homo sapiens

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<211> 500

<212> PRT

<213> Homo sapiens

<400> 363

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Cys | Thr | Ala | Arg | Glu | Trp | Leu | Arg | Val | Thr | Thr | Val | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Phe | Met | Ala | Arg | Ala | Ile | Pro | Ala | Met | Val | Val | Pro | Asn | Ala | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Leu | Glu | Lys | Leu | Leu | Glu | Lys | Tyr | Met | Asp | Glu | Asp | Gly | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Trp | Trp | Ile | Ala | Lys | Gln | Arg | Gly | Lys | Arg | Ala | Ile | Thr | Asp | Asn |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asp | Met | Gln | Ser | Ile | Leu | Asp | Leu | His | Asn | Lys | Leu | Arg | Ser | Gln |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Tyr | Pro | Thr | Ala | Ser | Asn | Met | Glu | Tyr | Met | Thr | Trp | Asp | Val |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Glu | Leu | Glu | Arg | Ser | Ala | Glu | Ser | Trp | Ala | Glu | Ser | Cys | Leu | Trp |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Glu | His | Gly | Pro | Ala | Ser | Leu | Leu | Pro | Ser | Ile | Gly | Gln | Asn | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Ala | His | Trp | Gly | Arg | Tyr | Arg | Pro | Pro | Thr | Phe | His | Val | Gln |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Trp | Tyr | Asp | Glu | Val | Lys | Asp | Phe | Ser | Tyr | Pro | Tyr | Glu | His |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Glu | Cys | Asn | Pro | Tyr | Cys | Pro | Phe | Arg | Cys | Ser | Gly | Pro | Val | Cys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Thr | His | Tyr | Thr | Gln | Val | Val | Trp | Ala | Thr | Ser | Asn | Arg | Ile | Gly |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 170 | | 175 | | 180 |
| Cys Ala Ile Asn | Leu Cys His Asn Met | Asn Ile Trp Gly Gln Ile | | | |
| | 185 | 190 | | | 195 |
| Trp Pro Lys Ala | Val Tyr Leu Val Cys | Asn Tyr Ser Pro Lys Gly | | | |
| | 200 | 205 | | | 210 |
| Asn Trp Trp Gly | His Ala Pro Tyr Lys | His Gly Arg Pro Cys Ser | | | |
| | 215 | 220 | | | 225 |
| Ala Cys Pro Pro | Ser Phe Gly Gly Gly | Cys Arg Glu Asn Leu Cys | | | |
| | 230 | 235 | | | 240 |
| Tyr Lys Glu Gly | Ser Asp Arg Tyr Tyr | Pro Pro Arg Glu Glu Glu | | | |
| | 245 | 250 | | | 255 |
| Thr Asn Glu Ile | Glu Arg Gln Gln Ser | Gln Val His Asp Thr His | | | |
| | 260 | 265 | | | 270 |
| Val Arg Thr Arg | Ser Asp Asp Ser Ser | Arg Asn Glu Val Ile Ser | | | |
| | 275 | 280 | | | 285 |
| Ala Gln Gln Met | Ser Gln Ile Val Ser | Cys Glu Val Arg Leu Arg | | | |
| | 290 | 295 | | | 300 |
| Asp Gln Cys Lys | Gly Thr Thr Cys Asn | Arg Tyr Glu Cys Pro Ala | | | |
| | 305 | 310 | | | 315 |
| Gly Cys Leu Asp | Ser Lys Ala Lys Val | Ile Gly Ser Val His Tyr | | | |
| | 320 | 325 | | | 330 |
| Glu Met Gln Ser | Ser Ile Cys Arg Ala | Ala Ile His Tyr Gly Ile | | | |
| | 335 | 340 | | | 345 |
| Ile Asp Asn Asp | Gly Gly Trp Val Asp | Ile Thr Arg Gln Gly Arg | | | |
| | 350 | 355 | | | 360 |
| Lys His Tyr Phe | Ile Lys Ser Asn Arg | Asn Gly Ile Gln Thr Ile | | | |
| | 365 | 370 | | | 375 |
| Gly Lys Tyr Gln | Ser Ala Asn Ser Phe | Thr Val Ser Lys Val Thr | | | |
| | 380 | 385 | | | 390 |
| Val Gln Ala Val | Thr Cys Glu Thr Thr | Val Glu Gln Leu Cys Pro | | | |
| | 395 | 400 | | | 405 |
| Phe His Lys Pro | Ala Ser His Cys Pro | Arg Val Tyr Cys Pro Arg | | | |
| | 410 | 415 | | | 420 |
| Asn Cys Met Gln | Ala Asn Pro His Tyr | Ala Arg Val Ile Gly Thr | | | |
| | 425 | 430 | | | 435 |
| Arg Val Tyr Ser | Asp Leu Ser Ser Ile | Cys Arg Ala Ala Val His | | | |
| | 440 | 445 | | | 450 |
| Ala Gly Val Val | Arg Asn His Gly Gly | Tyr Val Asp Val Met Pro | | | |
| | 455 | 460 | | | 465 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Asp | Lys | Arg | Lys | Thr | Tyr | Ile | Ala | Ser | Phe | Gln | Asn | Gly | Ile |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Phe | Ser | Glu | Ser | Leu | Gln | Asn | Pro | Pro | Gly | Gly | Lys | Ala | Phe | Arg |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Val | Phe | Ala | Val | Val | | | | | | | | | | |
| | | | | 500 | | | | | | | | | | |

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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 365
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<220>
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<400> 365
 ccaagagtat actgtcctcg 20

<210> 366
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<220>
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<400> 366
 agcacagatt ttctctacag ccccc 25

<210> 367
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 <212> DNA
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<210> 368
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00705-1060
 58582660

<220>
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<210> 369
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<212> DNA

<213> Homo sapiens

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<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<210> 374

<211> 3113

<212> DNA

<213> Homo sapiens

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<211> 816

<212> PRT

<213> Homo sapiens

<400> 375

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| Met | Leu | Asn | Ser | Asn | Val | Leu | Leu | Trp | Leu | Thr | Ala | Leu | Ala | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Phe | Thr | Leu | Ile | Asp | Ser | Gln | Ala | Gln | Tyr | Pro | Val | Val | Asn |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Asn | Tyr | Gly | Lys | Ile | Arg | Gly | Leu | Arg | Thr | Pro | Leu | Pro | Asn |
| | | | | 35 | | | | 40 | | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ile | Leu | Gly | Pro | Val | Glu | Gln | Tyr | Leu | Gly | Val | Pro | Tyr | Ala |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| 50 | | | | | | | | | | 55 | | | | | 60 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|--|--|--|--|
| Ser | Pro | Pro | Thr | Gly | Glu | Arg | Arg | Phe | Gln | Pro | Pro | Glu | Pro | Pro | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Ser | Ser | Trp | Thr | Gly | Ile | Arg | Asn | Thr | Thr | Gln | Phe | Ala | Ala | Val | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Cys | Pro | Gln | His | Leu | Asp | Glu | Arg | Ser | Leu | Leu | His | Asp | Met | Leu | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Pro | Ile | Trp | Phe | Thr | Ala | Asn | Leu | Asp | Thr | Leu | Met | Thr | Tyr | Val | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Gln | Asp | Gln | Asn | Glu | Asp | Cys | Leu | Tyr | Leu | Asn | Ile | Tyr | Val | Pro | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Thr | Glu | Asp | Gly | Ala | Asn | Thr | Lys | Lys | Asn | Ala | Asp | Asp | Ile | Thr | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Ser | Asn | Asp | Arg | Gly | Glu | Asp | Glu | Asp | Ile | His | Asp | Gln | Asn | Ser | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Lys | Lys | Pro | Val | Met | Val | Tyr | Ile | His | Gly | Gly | Ser | Tyr | Met | Glu | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Gly | Thr | Gly | Asn | Met | Ile | Asp | Gly | Ser | Ile | Leu | Ala | Ser | Tyr | Gly | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Asn | Val | Ile | Val | Ile | Thr | Ile | Asn | Tyr | Arg | Leu | Gly | Ile | Leu | Gly | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Phe | Leu | Ser | Thr | Gly | Asp | Gln | Ala | Ala | Lys | Gly | Asn | Tyr | Gly | Leu | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Leu | Asp | Gln | Ile | Gln | Ala | Leu | Arg | Trp | Ile | Glu | Glu | Asn | Val | Gly | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Ala | Phe | Gly | Gly | Asp | Pro | Lys | Arg | Val | Thr | Ile | Phe | Gly | Ser | Gly | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Ala | Gly | Ala | Ser | Cys | Val | Ser | Leu | Leu | Thr | Leu | Ser | His | Tyr | Ser | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Glu | Gly | Leu | Phe | Gln | Lys | Ala | Ile | Ile | Gln | Ser | Gly | Thr | Ala | Leu | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Ser | Ser | Trp | Ala | Val | Asn | Tyr | Gln | Pro | Ala | Lys | Tyr | Thr | Arg | Ile | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Leu | Ala | Asp | Lys | Val | Gly | Cys | Asn | Met | Leu | Asp | Thr | Thr | Asp | Met | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Val | Glu | Cys | Leu | Arg | Asn | Lys | Asn | Tyr | Lys | Glu | Leu | Ile | Gln | Gln | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Thr | Ile | Thr | Pro | Ala | Thr | Tyr | His | Ile | Ala | Phe | Gly | Pro | Val | Ile | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Gly | Asp | Val | Ile | Pro | Asp | Asp | Pro | Gln | Ile | Leu | Met | Glu | Gln | 350 | 355 | 360 |
| Gly | Glu | Phe | Leu | Asn | Tyr | Asp | Ile | Met | Leu | Gly | Val | Asn | Gln | Gly | 365 | 370 | 375 |
| Glu | Gly | Leu | Lys | Phe | Val | Asp | Gly | Ile | Val | Asp | Asn | Glu | Asp | Gly | 380 | 385 | 390 |
| Val | Thr | Pro | Asn | Asp | Phe | Asp | Phe | Ser | Val | Ser | Asn | Phe | Val | Asp | 395 | 400 | 405 |
| Asn | Leu | Tyr | Gly | Tyr | Pro | Glu | Gly | Lys | Asp | Thr | Leu | Arg | Glu | Thr | 410 | 415 | 420 |
| Ile | Lys | Phe | Met | Tyr | Thr | Asp | Trp | Ala | Asp | Lys | Glu | Asn | Pro | Glu | 425 | 430 | 435 |
| Thr | Arg | Arg | Lys | Thr | Leu | Val | Ala | Leu | Phe | Thr | Asp | His | Gln | Trp | 440 | 445 | 450 |
| Val | Ala | Pro | Ala | Val | Ala | Ala | Asp | Leu | His | Ala | Gln | Tyr | Gly | Ser | 455 | 460 | 465 |
| Pro | Thr | Tyr | Phe | Tyr | Ala | Phe | Tyr | His | His | Cys | Gln | Ser | Glu | Met | 470 | 475 | 480 |
| Lys | Pro | Ser | Trp | Ala | Asp | Ser | Ala | His | Gly | Asp | Glu | Val | Pro | Tyr | 485 | 490 | 495 |
| Val | Phe | Gly | Ile | Pro | Met | Ile | Gly | Pro | Thr | Glu | Leu | Phe | Ser | Cys | 500 | 505 | 510 |
| Asn | Phe | Ser | Lys | Asn | Asp | Val | Met | Leu | Ser | Ala | Val | Val | Met | Thr | 515 | 520 | 525 |
| Tyr | Trp | Thr | Asn | Phe | Ala | Lys | Thr | Gly | Asp | Pro | Asn | Gln | Pro | Val | 530 | 535 | 540 |
| Pro | Gln | Asp | Thr | Lys | Phe | Ile | His | Thr | Lys | Pro | Asn | Arg | Phe | Glu | 545 | 550 | 555 |
| Glu | Val | Ala | Trp | Ser | Lys | Tyr | Asn | Pro | Lys | Asp | Gln | Leu | Tyr | Leu | 560 | 565 | 570 |
| His | Ile | Gly | Leu | Lys | Pro | Arg | Val | Arg | Asp | His | Tyr | Arg | Ala | Thr | 575 | 580 | 585 |
| Lys | Val | Ala | Phe | Trp | Leu | Glu | Leu | Val | Pro | His | Leu | His | Asn | Leu | 590 | 595 | 600 |
| Asn | Glu | Ile | Phe | Gln | Tyr | Val | Ser | Thr | Thr | Thr | Lys | Val | Pro | Pro | 605 | 610 | 615 |
| Pro | Asp | Met | Thr | Ser | Phe | Pro | Tyr | Gly | Thr | Arg | Arg | Ser | Pro | Ala | 620 | 625 | 630 |
| Lys | Ile | Trp | Pro | Thr | Thr | Lys | Arg | Pro | Ala | Ile | Thr | Pro | Ala | Asn | | | |

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<210> 379

<211> 2461

<212> DNA

<213> Homo sapiens

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<212> PRT

<213> Homo sapiens

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Leu Leu Leu Gly Ser Gly Gln Gly Pro Gln Gln Val Gly Ala Gly
35 40 45

Gln Thr Phe Glu Tyr Leu Lys Arg Glu His Ser Leu Ser Lys Pro
50 55 60

Tyr Gln Gly Val Gly Thr Gly Ser Ser Ser Leu Trp Asn Leu Met
65 70 75

Gly Asn Ala Met Val Met Thr Gln Tyr Ile Arg Leu Thr Pro Asp
80 85 90

Met Gln Ser Lys Gln Gly Ala Leu Trp Asn Arg Val Pro Cys Phe
95 100 105

Leu Arg Asp Trp Glu Leu Gln Val His Phe Lys Ile His Gly Gln
110 115 120

Gly Lys Lys Asn Leu His Gly Asp Gly Leu Ala Ile Trp Tyr Thr
125 130 135

Lys Asp Arg Met Gln Pro Gly Pro Val Phe Gly Asn Met Asp Lys
140 145 150

Phe Val Gly Leu Gly Val Phe Val Asp Thr Tyr Pro Asn Glu Glu
155 160 165

Lys Gln Gln Glu Arg Val Phe Pro Tyr Ile Ser Ala Met Val Asn
170 175 180

Asn Gly Ser Leu Ser Tyr Asp His Glu Arg Asp Gly Arg Pro Thr
185 190 195

Glu Leu Gly Gly Cys Thr Ala Ile Val Arg Asn Leu His Tyr Asp
200 205 210

Thr Phe Leu Val Ile Arg Tyr Val Lys Arg His Leu Thr Ile Met
215 220 225

Met Asp Ile Asp Gly Lys His Glu Trp Arg Asp Cys Ile Glu Val
230 235 240

Pro Gly Val Arg Leu Pro Arg Gly Tyr Tyr Phe Gly Thr Ser Ser
245 250 255

| | | |
|-------------------------------------|-------------------------|-------------------------|
| Ile Thr Gly Asp | Leu Ser Asp Asn His | Asp Val Ile Ser Leu Lys |
| 260 | 265 | 270 |
| Leu Phe Glu Leu Thr Val Glu Arg Thr | Pro Glu Glu Glu Lys Leu | |
| 275 | 280 | 285 |
| His Arg Asp Val Phe Leu Pro Ser Val | Asp Asn Met Lys Leu Pro | |
| 290 | 295 | 300 |
| Glu Met Thr Ala Pro Leu Pro Pro Leu | Ser Gly Leu Ala Leu Phe | |
| 305 | 310 | 315 |
| Leu Ile Val Phe Phe Ser Leu Val Phe | Ser Val Phe Ala Ile Val | |
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Arg Phe Tyr

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<210> 383
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 tgtcacaggg aaggattcta aaaggatgc agtacagcag tatagaatcc 1750
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 ccacagatgg ttgggggtga acagtaagca cattgctgca atgtggtacg 1900
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 tatcatagcc agacttcgct tagaatgcca gaataatata gttcaagacc 2000
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<210> 385

<211> 480

<212> PRT

<213> Homo sapiens

<400> 385

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Leu | Phe | Arg | Asn | Arg | Phe | Leu | Leu | Leu | Leu | Ala | Leu | Ala | Ala | 1 | 5 | 10 | 15 |
| Leu | Leu | Ala | Phe | Val | Ser | Leu | Ser | Leu | Gln | Phe | Phe | His | Leu | Ile | 20 | 25 | 30 | |
| Pro | Val | Ser | Thr | Pro | Lys | Asn | Gly | Met | Ser | Ser | Lys | Ser | Arg | Lys | 35 | 40 | 45 | |
| Arg | Ile | Met | Pro | Asp | Pro | Val | Thr | Glu | Pro | Pro | Val | Thr | Asp | Pro | 50 | 55 | 60 | |
| Val | Tyr | Glu | Ala | Leu | Leu | Tyr | Cys | Asn | Ile | Pro | Ser | Val | Ala | Glu | 65 | 70 | 75 | |
| Arg | Ser | Met | Glu | Gly | His | Ala | Pro | His | His | Phe | Lys | Leu | Val | Ser | 80 | 85 | 90 | |
| Val | His | Val | Phe | Ile | Arg | His | Gly | Asp | Arg | Tyr | Pro | Leu | Tyr | Val | 95 | 100 | 105 | |
| Ile | Pro | Lys | Thr | Lys | Arg | Pro | Glu | Ile | Asp | Cys | Thr | Leu | Val | Ala | 110 | 115 | 120 | |
| Asn | Arg | Lys | Pro | Tyr | His | Pro | Lys | Leu | Glu | Ala | Phe | Ile | Ser | His | 125 | 130 | 135 | |
| Met | Ser | Lys | Gly | Ser | Gly | Ala | Ser | Phe | Glu | Ser | Pro | Leu | Asn | Ser | 140 | 145 | 150 | |
| Leu | Pro | Leu | Tyr | Pro | Asn | His | Pro | Leu | Cys | Glu | Met | Gly | Glu | Leu | 155 | 160 | 165 | |
| Thr | Gln | Thr | Gly | Val | Val | Gln | His | Leu | Gln | Asn | Gly | Gln | Leu | Leu | 170 | 175 | 180 | |
| Arg | Asp | Ile | Tyr | Leu | Lys | Lys | His | Lys | Leu | Leu | Pro | Asn | Asp | Trp | 185 | 190 | 195 | |
| Ser | Ala | Asp | Gln | Leu | Tyr | Leu | Glu | Thr | Thr | Gly | Lys | Ser | Arg | Thr | 200 | 205 | 210 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gln | Ser | Gly | Leu | Ala | Leu | Leu | Tyr | Gly | Phe | Leu | Pro | Asp | Phe | 215 | 220 | 225 |
| Asp | Trp | Lys | Lys | Ile | Tyr | Phe | Arg | His | Gln | Pro | Ser | Ala | Leu | Phe | 230 | 235 | 240 |
| Cys | Ser | Gly | Ser | Cys | Tyr | Cys | Pro | Val | Arg | Asn | Gln | Tyr | Leu | Glu | 245 | 250 | 255 |
| Lys | Glu | Gln | Arg | Arg | Gln | Tyr | Leu | Leu | Arg | Leu | Lys | Asn | Ser | Gln | 260 | 265 | 270 |
| Leu | Glu | Lys | Thr | Tyr | Gly | Glu | Met | Ala | Lys | Ile | Val | Asp | Val | Pro | 275 | 280 | 285 |
| Thr | Lys | Gln | Leu | Arg | Ala | Ala | Asn | Pro | Ile | Asp | Ser | Met | Leu | Cys | 290 | 295 | 300 |
| His | Phe | Cys | His | Asn | Val | Ser | Phe | Pro | Cys | Thr | Arg | Asn | Gly | Cys | 305 | 310 | 315 |
| Val | Asp | Met | Glu | His | Phe | Lys | Val | Ile | Lys | Thr | His | Gln | Ile | Glu | 320 | 325 | 330 |
| Asp | Glu | Arg | Glu | Arg | Arg | Glu | Lys | Lys | Leu | Tyr | Phe | Gly | Tyr | Ser | 335 | 340 | 345 |
| Leu | Leu | Gly | Ala | His | Pro | Ile | Leu | Asn | Gln | Thr | Ile | Gly | Arg | Met | 350 | 355 | 360 |
| Gln | Arg | Ala | Thr | Glu | Gly | Arg | Lys | Glu | Glu | Leu | Phe | Ala | Leu | Tyr | 365 | 370 | 375 |
| Ser | Ala | His | Asp | Val | Thr | Leu | Ser | Pro | Val | Leu | Ser | Ala | Leu | Gly | 380 | 385 | 390 |
| Leu | Ser | Glu | Ala | Arg | Phe | Pro | Arg | Phe | Ala | Ala | Arg | Leu | Ile | Phe | 395 | 400 | 405 |
| Glu | Leu | Trp | Gln | Asp | Arg | Glu | Lys | Pro | Ser | Glu | His | Ser | Val | Arg | 410 | 415 | 420 |
| Ile | Leu | Tyr | Asn | Gly | Val | Asp | Val | Thr | Phe | His | Thr | Ser | Phe | Cys | 425 | 430 | 435 |
| Gln | Asp | His | His | Lys | Arg | Ser | Pro | Lys | Pro | Met | Cys | Pro | Leu | Glu | 440 | 445 | 450 |
| Asn | Leu | Val | Arg | Phe | Val | Lys | Arg | Asp | Met | Phe | Val | Ala | Leu | Gly | 455 | 460 | 465 |
| Gly | Ser | Gly | Thr | Asn | Tyr | Tyr | Asp | Ala | Cys | His | Arg | Glu | Gly | Phe | 470 | 475 | 480 |

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

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<210> 387
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 387
ttccctatgc tctgtattgg catgg 25

<210> 388
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 388
gccacttctg ccacaatgtc agctttccct gtaccagaaa tggctgtgtt 50

<210> 389
<211> 3313
<212> DNA
<213> Homo sapiens

<400> 389
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cccttttgaa gaacagtact gtggagctat ttaagagata aaaacgaaat 100
atcctttctg ggagttcaag attgtgcagt aattggttag gactctgagc 150
gccgctgttc accaatcggg gagagaaaag cggagatcct gctcgccttg 200
cacgcgcctg aagcacaaaag cagatagcta ggaatgaacc atccctggga 250
gtatgtggaa acaacggagg agctctgact tcccaactgt cccattctat 300
gggcgaagga actgctcctg acttcagtgg ttaagggcag aattgaaaat 350
aattctggag gaagataaga atgattcctg cgcgactgca ccgggactac 400
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gggtgggcga catctccagg gacctggggc tggagccccg ggagctcgcg 550
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gaatccgcgc agcggcagct tggtcacggc gggcaggata gaccgggagg 650
 agctctgtat gggggccatc aagtgtcaat taaatctaga cattctgatg 700
 gaggataaag tgaaaatata tggagtagaa gtagaagtaa gggacattaa 750
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 aaaatgcagc cactgagatg cggttccctc taccccacgc ctgggatccg 850
 gatatcggga agaactctct gcagagctac gagctcagcc cgaacactca 900
 cttctccctc atcgtgcaaa atggagccga cggtagtaag taccgccaat 950
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 gtoccttacgg cctccgacgg gggcgacccg gtgcgcacag gcaccgcgcg 1050
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 gagtcaggat tctaccagat ggaagtgcaa gcaatggata atgcaggata 1350
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 actggggtac tgtatgcgt gagctccttc gactacgagc agttccgaga 1950
 cttgcaagtg aaagtgatgg cgcgggacaa cgggcacccg cccctcagca 2000
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| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 290 | | | | | 295 | | | | | 300 |
| Ile | Ser | Thr | Ile | Gly 305 | Glu | Leu | Asp | His | Glu 310 | Glu | Ser | Gly | Phe | Tyr 315 |
| Gln | Met | Glu | Val | Gln 320 | Ala | Met | Asp | Asn | Ala 325 | Gly | Tyr | Ser | Ala | Arg 330 |
| Ala | Lys | Val | Leu | Ile 335 | Thr | Val | Leu | Asp | Val 340 | Asn | Asp | Asn | Ala | Pro 345 |
| Glu | Val | Val | Leu | Thr 350 | Ser | Leu | Ala | Ser | Ser 355 | Val | Pro | Glu | Asn | Ser 360 |
| Pro | Arg | Gly | Thr | Leu 365 | Ile | Ala | Leu | Leu | Asn 370 | Val | Asn | Asp | Gln | Asp 375 |
| Ser | Glu | Glu | Asn | Gly 380 | Gln | Val | Ile | Cys | Phe 385 | Ile | Gln | Gly | Asn | Leu 390 |
| Pro | Phe | Lys | Leu | Glu 395 | Lys | Ser | Tyr | Gly | Asn 400 | Tyr | Tyr | Ser | Leu | Val 405 |
| Thr | Asp | Ile | Val | Leu 410 | Asp | Arg | Glu | Gln | Val 415 | Pro | Ser | Tyr | Asn | Ile 420 |
| Thr | Val | Thr | Ala | Thr 425 | Asp | Arg | Gly | Thr | Pro 430 | Pro | Leu | Ser | Thr | Glu 435 |
| Thr | His | Ile | Ser | Leu 440 | Asn | Val | Ala | Asp | Thr 445 | Asn | Asp | Asn | Pro | Pro 450 |
| Val | Phe | Pro | Gln | Ala 455 | Ser | Tyr | Ser | Ala | Tyr 460 | Ile | Pro | Glu | Asn | Asn 465 |
| Pro | Arg | Gly | Val | Ser 470 | Leu | Val | Ser | Val | Thr 475 | Ala | His | Asp | Pro | Asp 480 |
| Cys | Glu | Glu | Asn | Ala 485 | Gln | Ile | Thr | Tyr | Ser 490 | Leu | Ala | Glu | Asn | Thr 495 |
| Ile | Gln | Gly | Ala | Ser 500 | Leu | Ser | Ser | Tyr | Val 505 | Ser | Ile | Asn | Ser | Asp 510 |
| Thr | Gly | Val | Leu | Tyr 515 | Ala | Leu | Ser | Ser | Phe 520 | Asp | Tyr | Glu | Gln | Phe 525 |
| Arg | Asp | Leu | Gln | Val 530 | Lys | Val | Met | Ala | Arg 535 | Asp | Asn | Gly | His | Pro 540 |
| Pro | Leu | Ser | Ser | Asn 545 | Val | Ser | Leu | Ser | Leu 550 | Phe | Val | Leu | Asp | Gln 555 |
| Asn | Asp | Asn | Ala | Pro 560 | Glu | Ile | Leu | Tyr | Pro 565 | Ala | Leu | Pro | Thr | Asp 570 |
| Gly | Ser | Thr | Gly | Val 575 | Glu | Leu | Ala | Pro | Arg 580 | Ser | Ala | Glu | Pro | Gly 585 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Leu | Val | Thr | Lys | Val | Val | Ala | Val | Asp | Arg | Asp | Ser | Gly | Gln | 590 | 595 | 600 |
| Asn | Ala | Trp | Leu | Ser | Tyr | Arg | Leu | Leu | Lys | Ala | Ser | Glu | Pro | Gly | 605 | 610 | 615 |
| Leu | Phe | Ser | Val | Gly | Leu | His | Thr | Gly | Glu | Val | Arg | Thr | Ala | Arg | 620 | 625 | 630 |
| Ala | Leu | Leu | Asp | Arg | Asp | Ala | Leu | Lys | Gln | Ser | Leu | Val | Val | Ala | 635 | 640 | 645 |
| Val | Gln | Asp | His | Gly | Gln | Pro | Pro | Leu | Ser | Ala | Thr | Val | Thr | Leu | 650 | 655 | 660 |
| Thr | Val | Ala | Val | Ala | Asp | Ser | Ile | Pro | Gln | Val | Leu | Ala | Asp | Leu | 665 | 670 | 675 |
| Gly | Ser | Leu | Glu | Ser | Pro | Ala | Asn | Ser | Glu | Thr | Ser | Asp | Leu | Thr | 680 | 685 | 690 |
| Leu | Tyr | Leu | Val | Val | Ala | Val | Ala | Ala | Val | Ser | Cys | Val | Phe | Leu | 695 | 700 | 705 |
| Ala | Phe | Val | Ile | Leu | Leu | Leu | Ala | Leu | Arg | Leu | Arg | Arg | Trp | His | 710 | 715 | 720 |
| Lys | Ser | Arg | Leu | Leu | Gln | Ala | Ser | Gly | Gly | Gly | Leu | Thr | Gly | Ala | 725 | 730 | 735 |
| Pro | Ala | Ser | His | Phe | Val | Gly | Val | Asp | Gly | Val | Gln | Ala | Phe | Leu | 740 | 745 | 750 |
| Gln | Thr | Tyr | Ser | His | Glu | Val | Ser | Leu | Thr | Thr | Asp | Ser | Arg | Lys | 755 | 760 | 765 |
| Ser | His | Leu | Ile | Phe | Pro | Gln | Pro | Asn | Tyr | Ala | Asp | Met | Leu | Val | 770 | 775 | 780 |
| Ser | Gln | Glu | Ser | Phe | Glu | Lys | Ser | Glu | Pro | Leu | Leu | Leu | Ser | Gly | 785 | 790 | 795 |
| Asp | Ser | Val | Phe | Ser | Lys | Asp | Ser | His | Gly | Leu | Ile | Glu | Val | Ser | 800 | 805 | 810 |
| Leu | Tyr | Gln | Ile | Phe | Phe | Leu | Phe | Phe | Phe | Asn | Cys | Ser | Val | Ser | 815 | 820 | 825 |
| Gln | Ala | Gly | Val | Gln | Arg | Tyr | Asp | His | Ser | Ser | Leu | Arg | Pro | Gln | 830 | 835 | 840 |
| Thr | Pro | Arg | Leu | Lys | Gln | Leu | Ser | His | Leu | Cys | Leu | Arg | Cys | Asn | 845 | 850 | 855 |
| Arg | Asp | Tyr | Arg | Cys | Lys | Pro | Pro | Thr | Val | Cys | Leu | Ser | Ile | Tyr | 860 | 865 | 870 |
| Leu | Ser | Ile | Tyr | Leu | Ser | Ile | Tyr | Leu | Ser | Ile | Tyr | Leu | Leu | Leu | | | |

| | | | | | |
|---|-----|--|-----|--|-----|
| | 875 | | 880 | | 885 |
| Ser Cys Thr Asp Gly Ser Leu Thr Pro Val Ile Pro Val Leu Trp | | | | | |
| | 890 | | 895 | | 900 |
| Glu Ala Glu Ala Gly Gly Ser Pro Glu Val Gly Ser Leu Arg Pro | | | | | |
| | 905 | | 910 | | 915 |

Ala

<210> 391
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 391
 tccgtctctg tgaaccgccc cac 23

<210> 392
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 392
 ctcgggcgca ttgtcgttct ggtc 24

<210> 393
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 393
 ccgactgtga aagagaacgc cccagatcca cttgttcccc 40

<210> 394
 <211> 999
 <212> DNA
 <213> Homo sapiens

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 cccagttaaa aggtccaga atcgtgtacc aggcagagaa ctgaagtact 100
 ggggcctcct ccactgggtc cgaatcagta ggtgaccccg cccctggatt 150
 ctggaagacc tcaccatggg acgccccga cctcgtgcgg ccaagacgtg 200

gatgttcctg ctcttgctgg ggggagcctg ggcaggacac tccagggcac 250
 aggaggacaa ggtgctgggg ggtcatgagt gccaacccca ttcgcagcct 300
 tggcaggcgg ccttggtcca gggccagcaa ctactctgtg gcggtgtcct 350
 tgtaggtggc aactgggtcc ttacagctgc ccactgtaaa aaaccgaaat 400
 acacagtacg cctgggagac cacagcctac agaataaaga tggcccagag 450
 caagaaatac ctgtggttca gtccatccca caccctgct acaacagcag 500
 cgatgtggag gaccacaacc atgatctgat gcttcttcaa ctgcgtgacc 550
 aggcattccct ggggtccaaa gtgaagccca tcagcctggc agatcattgc 600
 acccagcctg gccagaagtg caccgtctca ggctggggca ctgtcaccag 650
 tccccgagag aattttcctg acactctcaa ctgtgcagaa gtaaaaatct 700
 ttccccagaa gaagtgtgag gatgcttacc cggggcagat cacagatggc 750
 atggtctgtg caggcagcag caaaggggct gacacgtgcc agggcgattc 800
 tggaggcccc ctggtgtgtg atggtgcact ccagggcata acatcctggg 850
 gctcagaccc ctgtgggagg tccgacaaac ctggcgtcta taccaacatc 900
 tgccgctacc tggactggat caagaagatc ataggcagca agggctgatt 950
 ctaggataag cactagatct cccttaataa actcacaact ctctggttc 999

<210> 395

<211> 260

<212> PRT

<213> Homo sapiens

<400> 395

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Arg | Pro | Arg | Pro | Arg | Ala | Ala | Lys | Thr | Trp | Met | Phe | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Leu | Leu | Gly | Gly | Ala | Trp | Ala | Gly | His | Ser | Arg | Ala | Gln | Glu |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Asp | Lys | Val | Leu | Gly | Gly | His | Glu | Cys | Gln | Pro | His | Ser | Gln | Pro |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Trp | Gln | Ala | Ala | Leu | Phe | Gln | Gly | Gln | Gln | Leu | Leu | Cys | Gly | Gly |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Val | Leu | Val | Gly | Gly | Asn | Trp | Val | Leu | Thr | Ala | Ala | His | Cys | Lys |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Lys | Pro | Lys | Tyr | Thr | Val | Arg | Leu | Gly | Asp | His | Ser | Leu | Gln | Asn |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Lys | Asp | Gly | Pro | Glu | Gln | Glu | Ile | Pro | Val | Val | Gln | Ser | Ile | Pro |
| | | | 95 | | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Pro | Cys | Tyr | Asn | Ser | Ser | Asp | Val | Glu | Asp | His | Asn | His | Asp |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Met | Leu | Leu | Gln | Leu | Arg | Asp | Gln | Ala | Ser | Leu | Gly | Ser | Lys |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Val | Lys | Pro | Ile | Ser | Leu | Ala | Asp | His | Cys | Thr | Gln | Pro | Gly | Gln |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Lys | Cys | Thr | Val | Ser | Gly | Trp | Gly | Thr | Val | Thr | Ser | Pro | Arg | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Asn | Phe | Pro | Asp | Thr | Leu | Asn | Cys | Ala | Glu | Val | Lys | Ile | Phe | Pro |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gln | Lys | Lys | Cys | Glu | Asp | Ala | Tyr | Pro | Gly | Gln | Ile | Thr | Asp | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Met | Val | Cys | Ala | Gly | Ser | Ser | Lys | Gly | Ala | Asp | Thr | Cys | Gln | Gly |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Asp | Ser | Gly | Gly | Pro | Leu | Val | Cys | Asp | Gly | Ala | Leu | Gln | Gly | Ile |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Thr | Ser | Trp | Gly | Ser | Asp | Pro | Cys | Gly | Arg | Ser | Asp | Lys | Pro | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | Tyr | Thr | Asn | Ile | Cys | Arg | Tyr | Leu | Asp | Trp | Ile | Lys | Lys | Ile |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ile | Gly | Ser | Lys | Gly | | | | | | | | | | |
| | | | | 260 | | | | | | | | | | |

<210> 396

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 396

cagcctacag aataaagatg gccc 24

<210> 397

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 397

ggtgcaatga tctgccaggc tgat 24

<210> 398

<211> 48

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 398

agaaatacct gtggttcagt ccataccaaa cccctgctac aacagcag 48

<210> 399

<211> 2236

<212> DNA

<213> Homo sapiens

<400> 399

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<212> PRT

<213> Homo sapiens

<400> 400

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| Met | Lys | Arg | Ala | Ser | Ala | Gly | Gly | Ser | Arg | Leu | Leu | Ala | Trp | Val |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Trp | Leu | Gln | Ala | Trp | Gln | Val | Ala | Ala | Pro | Cys | Pro | Gly | Ala |
| | | | 20 | | | | | | 25 | | | | | 30 |

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<210> 404

<211> 2738

<212> DNA

<213> Homo sapiens

<400> 404

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<211> 798
<212> PRT
<213> Homo sapiens

<400> 405

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| Met | Glu | Ala | Ser | Gly | Lys | Leu | Ile | Cys | Arg | Gln | Arg | Gln | Val | Leu | 1 | 5 | 10 | 15 |
| Phe | Ser | Phe | Leu | Leu | Leu | Gly | Leu | Ser | Leu | Ala | Gly | Ala | Ala | Glu | 20 | 25 | 30 | |
| Pro | Arg | Ser | Tyr | Ser | Val | Val | Glu | Glu | Thr | Glu | Gly | Ser | Ser | Phe | 35 | 40 | 45 | |
| Val | Thr | Asn | Leu | Ala | Lys | Asp | Leu | Gly | Leu | Glu | Gln | Arg | Glu | Phe | 50 | 55 | 60 | |
| Ser | Arg | Arg | Gly | Val | Arg | Val | Val | Ser | Arg | Gly | Asn | Lys | Leu | His | 65 | 70 | 75 | |
| Leu | Gln | Leu | Asn | Gln | Glu | Thr | Ala | Asp | Leu | Leu | Leu | Asn | Glu | Lys | 80 | 85 | 90 | |
| Leu | Asp | Arg | Glu | Asp | Leu | Cys | Gly | His | Thr | Glu | Pro | Cys | Val | Leu | 95 | 100 | 105 | |
| Arg | Phe | Gln | Val | Leu | Leu | Glu | Ser | Pro | Phe | Glu | Phe | Phe | Gln | Ala | 110 | 115 | 120 | |
| Glu | Leu | Gln | Val | Ile | Asp | Ile | Asn | Asp | His | Ser | Pro | Val | Phe | Leu | 125 | 130 | 135 | |
| Asp | Lys | Gln | Met | Leu | Val | Lys | Val | Ser | Glu | Ser | Ser | Pro | Pro | Gly | 140 | 145 | 150 | |
| Thr | Thr | Phe | Pro | Leu | Lys | Asn | Ala | Glu | Asp | Leu | Asp | Val | Gly | Gln | 155 | 160 | 165 | |
| Asn | Asn | Ile | Glu | Asn | Tyr | Ile | Ile | Ser | Pro | Asn | Ser | Tyr | Phe | Arg | 170 | 175 | 180 | |
| Val | Leu | Thr | Arg | Lys | Arg | Ser | Asp | Gly | Arg | Lys | Tyr | Pro | Glu | Leu | 185 | 190 | 195 | |
| Val | Leu | Asp | Lys | Ala | Leu | Asp | Arg | Glu | Glu | Glu | Ala | Glu | Leu | Arg | 200 | 205 | 210 | |
| Leu | Thr | Leu | Thr | Ala | Leu | Asp | Gly | Gly | Ser | Pro | Pro | Arg | Ser | Gly | 215 | 220 | 225 | |
| Thr | Ala | Gln | Val | Tyr | Ile | Glu | Val | Leu | Asp | Val | Asn | Asp | Asn | Ala | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Gly | Phe | Gln | Phe | Arg | Val | Gly | Ala | Ser | Asp | His | Gly | Ser | Pro | Ala | |
| | | | | 530 | | | | | 535 | | | | | 540 | |
| Leu | Ser | Ser | Glu | Ala | Leu | Val | Arg | Val | Val | Val | Leu | Asp | Ala | Asn | |
| | | | | 545 | | | | | 550 | | | | | 555 | |
| Asp | Asn | Ser | Pro | Phe | Val | Leu | Tyr | Pro | Leu | Gln | Asn | Gly | Ser | Ala | |
| | | | | 560 | | | | | 565 | | | | | 570 | |
| Pro | Cys | Thr | Glu | Leu | Val | Pro | Arg | Ala | Ala | Glu | Pro | Gly | Tyr | Leu | |
| | | | | 575 | | | | | 580 | | | | | 585 | |
| Val | Thr | Lys | Val | Val | Ala | Val | Asp | Gly | Asp | Ser | Gly | Gln | Asn | Ala | |
| | | | | 590 | | | | | 595 | | | | | 600 | |
| Trp | Leu | Ser | Tyr | Gln | Leu | Leu | Lys | Ala | Thr | Glu | Leu | Gly | Leu | Phe | |
| | | | | 605 | | | | | 610 | | | | | 615 | |
| Gly | Val | Trp | Ala | His | Asn | Gly | Glu | Val | Arg | Thr | Ala | Arg | Leu | Leu | |
| | | | | 620 | | | | | 625 | | | | | 630 | |
| Ser | Glu | Arg | Asp | Ala | Ala | Lys | His | Arg | Leu | Val | Val | Leu | Val | Lys | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Asp | Asn | Gly | Glu | Pro | Pro | Arg | Ser | Ala | Thr | Ala | Thr | Leu | His | Val | |
| | | | | 650 | | | | | 655 | | | | | 660 | |
| Leu | Leu | Val | Asp | Gly | Phe | Ser | Gln | Pro | Tyr | Leu | Pro | Leu | Pro | Glu | |
| | | | | 665 | | | | | 670 | | | | | 675 | |
| Ala | Ala | Pro | Thr | Gln | Ala | Gln | Ala | Asp | Leu | Leu | Thr | Val | Tyr | Leu | |
| | | | | 680 | | | | | 685 | | | | | 690 | |
| Val | Val | Ala | Leu | Ala | Ser | Val | Ser | Ser | Leu | Phe | Leu | Phe | Ser | Val | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Leu | Leu | Phe | Val | Ala | Val | Arg | Leu | Cys | Arg | Arg | Ser | Arg | Ala | Ala | |
| | | | | 710 | | | | | 715 | | | | | 720 | |
| Ser | Val | Gly | Arg | Cys | Leu | Val | Pro | Glu | Gly | Pro | Leu | Pro | Gly | His | |
| | | | | 725 | | | | | 730 | | | | | 735 | |
| Leu | Val | Asp | Met | Ser | Gly | Thr | Arg | Thr | Leu | Ser | Gln | Ser | Tyr | Gln | |
| | | | | 740 | | | | | 745 | | | | | 750 | |
| Tyr | Glu | Val | Cys | Leu | Ala | Gly | Gly | Ser | Gly | Thr | Asn | Glu | Phe | Lys | |
| | | | | 755 | | | | | 760 | | | | | 765 | |
| Phe | Leu | Lys | Pro | Ile | Ile | Pro | Asn | Phe | Pro | Pro | Gln | Cys | Pro | Gly | |
| | | | | 770 | | | | | 775 | | | | | 780 | |
| Lys | Glu | Ile | Gln | Gly | Asn | Ser | Thr | Phe | Pro | Asn | Asn | Phe | Gly | Phe | |
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<211> 360
<212> PRT
<213> Homo sapiens

<400> 410
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Leu Gly Trp Trp Gln Val Leu Leu Trp Val Leu Gly Leu Pro Val
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Arg Gly Val Glu Val Ala Glu Glu Ser Gly Arg Leu Trp Ser Glu
35 40 45
Glu Gln Pro Ala His Pro Leu Gln Val Gly Ala Val Tyr Leu Gly
50 55 60
Glu Glu Glu Leu Leu His Asp Pro Met Gly Gln Asp Arg Ala Ala
65 70 75
Glu Glu Ala Asn Ala Val Leu Gly Leu Asp Thr Gln Gly Asp His

| 80 | | | | | 85 | | | | | 90 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Met | Leu | Ser | Val | Ile | Pro | Gly | Glu | Ala | Glu | Asp | Lys | Val |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Ser | Ser | Glu | Pro | Ser | Gly | Val | Thr | Cys | Gly | Ala | Gly | Gly | Ala | Glu |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Asp | Ser | Arg | Cys | Asn | Val | Arg | Glu | Ser | Leu | Phe | Ser | Leu | Asp | Gly |
| | | | 125 | | | | | | 130 | | | | | 135 |
| Ala | Gly | Ala | His | Phe | Pro | Asp | Arg | Glu | Glu | Glu | Tyr | Tyr | Thr | Glu |
| | | | 140 | | | | | | 145 | | | | | 150 |
| Pro | Glu | Val | Ala | Glu | Ser | Asp | Ala | Ala | Pro | Thr | Glu | Asp | Ser | Asn |
| | | | 155 | | | | | | 160 | | | | | 165 |
| Asn | Thr | Glu | Ser | Leu | Lys | Ser | Pro | Lys | Val | Asn | Cys | Glu | Glu | Arg |
| | | | 170 | | | | | | 175 | | | | | 180 |
| Asn | Ile | Thr | Gly | Leu | Glu | Asn | Phe | Thr | Leu | Lys | Ile | Leu | Asn | Met |
| | | | 185 | | | | | | 190 | | | | | 195 |
| Ser | Gln | Asp | Leu | Met | Asp | Phe | Leu | Asn | Pro | Asn | Gly | Ser | Asp | Cys |
| | | | 200 | | | | | | 205 | | | | | 210 |
| Thr | Leu | Val | Leu | Phe | Tyr | Thr | Pro | Trp | Cys | Arg | Phe | Ser | Ala | Ser |
| | | | 215 | | | | | | 220 | | | | | 225 |
| Leu | Ala | Pro | His | Phe | Asn | Ser | Leu | Pro | Arg | Ala | Phe | Pro | Ala | Leu |
| | | | 230 | | | | | | 235 | | | | | 240 |
| His | Phe | Leu | Ala | Leu | Asp | Ala | Ser | Gln | His | Ser | Ser | Leu | Ser | Thr |
| | | | 245 | | | | | | 250 | | | | | 255 |
| Arg | Phe | Gly | Thr | Val | Ala | Val | Pro | Asn | Ile | Leu | Leu | Phe | Gln | Gly |
| | | | 260 | | | | | | 265 | | | | | 270 |
| Ala | Lys | Pro | Met | Ala | Arg | Phe | Asn | His | Thr | Asp | Arg | Thr | Leu | Glu |
| | | | 275 | | | | | | 280 | | | | | 285 |
| Thr | Leu | Lys | Ile | Phe | Ile | Phe | Asn | Gln | Thr | Gly | Ile | Glu | Ala | Lys |
| | | | 290 | | | | | | 295 | | | | | 300 |
| Lys | Asn | Val | Val | Val | Thr | Gln | Ala | Asp | Gln | Ile | Gly | Pro | Leu | Pro |
| | | | 305 | | | | | | 310 | | | | | 315 |
| Ser | Thr | Leu | Ile | Lys | Ser | Val | Asp | Trp | Leu | Leu | Val | Phe | Ser | Leu |
| | | | 320 | | | | | | 325 | | | | | 330 |
| Phe | Phe | Leu | Ile | Ser | Phe | Ile | Met | Tyr | Ala | Thr | Ile | Arg | Thr | Glu |
| | | | 335 | | | | | | 340 | | | | | 345 |
| Ser | Ile | Arg | Trp | Leu | Ile | Pro | Gly | Gln | Glu | Gln | Glu | His | Val | Glu |
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<220>
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<210> 412
<211> 25
<212> DNA
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<220>
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<400> 412
ccacatgttc ctgctcttgc cctgg 25

<210> 413
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<212> DNA
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<210> 414
<211> 1196
<212> DNA
<213> Homo sapiens

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ggctcggcgc gcgggctctt cctctttggc cagcccgact tctcctacaa 150
gcgcagcaat tgcaagccca tcccggtcaa cctgcagctg tgccacggca 200
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<210> 415

<211> 295

<212> PRT

<213> Homo sapiens

<400> 415

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| Met | Leu | Gln | Gly | Pro | Gly | Ser | Leu | Leu | Leu | Leu | Phe | Leu | Ala | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| His | Cys | Cys | Leu | Gly | Ser | Ala | Arg | Gly | Leu | Phe | Leu | Phe | Gly | Gln |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Pro | Asp | Phe | Ser | Tyr | Lys | Arg | Ser | Asn | Cys | Lys | Pro | Ile | Pro | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Asn | Leu | Gln | Leu | Cys | His | Gly | Ile | Glu | Tyr | Gln | Asn | Met | Arg | Leu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Pro | Asn | Leu | Leu | Gly | His | Glu | Thr | Met | Lys | Glu | Val | Leu | Glu | Gln |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ala | Gly | Ala | Trp | Ile | Pro | Leu | Val | Met | Lys | Gln | Cys | His | Pro | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Thr | Lys | Lys | Phe | Leu | Cys | Ser | Leu | Phe | Ala | Pro | Val | Cys | Leu | Asp |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Asp | Leu | Asp | Glu | Thr | Ile | Gln | Pro | Cys | His | Ser | Leu | Cys | Val | Gln |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Val | Lys | Asp | Arg | Cys | Ala | Pro | Val | Met | Ser | Ala | Phe | Gly | Phe | Pro |
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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 418

ctcttcctct ttggccagcc cgacttctcc tacaagcgca gaattgc 47

<210> 419

<211> 1830

<212> DNA

<213> Homo sapiens

<400> 419

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gctgtggctc agctttgcac ctgtggctga cgtcattgct gaggacttgg 200
tctgtccat ggagcagatc aactggctgt cactgggtcta cctcgtggta 250
tccaccccat ttggcgtggc ggccatctgg atcctggact ccgtcgggct 300
ccgtgcggcg accatcctgg gtgcgtggct gaactttgcc gggagtgtgc 350
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<210> 420

<211> 560

<212> PRT

<213> Homo sapiens

<400> 420

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Val Phe Leu Leu Ala Ile Ser Leu Leu Asn Cys Ser Asn Ala Thr
 35 40 45

Leu Trp Leu Ser Phe Ala Pro Val Ala Asp Val Ile Ala Glu Asp
 50 55 60

Leu Val Leu Ser Met Glu Gln Ile Asn Trp Leu Ser Leu Val Tyr
 65 70 75

Leu Val Val Ser Thr Pro Phe Gly Val Ala Ala Ile Trp Ile Leu
 80 85 90

Asp Ser Val Gly Leu Arg Ala Ala Thr Ile Leu Gly Ala Trp Leu
 95 100 105

Asn Phe Ala Gly Ser Val Leu Arg Met Val Pro Cys Met Val Val

| | | |
|---|-----|-----|
| 110 | 115 | 120 |
| Gly Thr Gln Asn Pro Phe Ala Phe Leu Met Gly Gly Gln Ser Leu | | |
| 125 | 130 | 135 |
| Cys Ala Leu Ala Gln Ser Leu Val Ile Phe Ser Pro Ala Lys Leu | | |
| 140 | 145 | 150 |
| Ala Ala Leu Trp Phe Pro Glu His Gln Arg Ala Thr Ala Asn Met | | |
| 155 | 160 | 165 |
| Leu Ala Thr Met Ser Asn Pro Leu Gly Val Leu Val Ala Asn Val | | |
| 170 | 175 | 180 |
| Leu Ser Pro Val Leu Val Lys Lys Gly Glu Asp Ile Pro Leu Met | | |
| 185 | 190 | 195 |
| Leu Gly Val Tyr Thr Ile Pro Ala Gly Val Val Cys Leu Leu Ser | | |
| 200 | 205 | 210 |
| Thr Ile Cys Leu Trp Glu Ser Val Pro Pro Thr Pro Pro Ser Ala | | |
| 215 | 220 | 225 |
| Gly Ala Ala Ser Ser Thr Ser Glu Lys Phe Leu Asp Gly Leu Lys | | |
| 230 | 235 | 240 |
| Leu Gln Leu Met Trp Asn Lys Ala Tyr Val Ile Leu Ala Val Cys | | |
| 245 | 250 | 255 |
| Leu Gly Gly Met Ile Gly Ile Ser Ala Ser Phe Ser Ala Leu Leu | | |
| 260 | 265 | 270 |
| Glu Gln Ile Leu Cys Ala Ser Gly His Ser Ser Gly Phe Ser Gly | | |
| 275 | 280 | 285 |
| Leu Cys Gly Ala Leu Phe Ile Thr Phe Gly Ile Leu Gly Ala Leu | | |
| 290 | 295 | 300 |
| Ala Leu Gly Pro Tyr Val Asp Arg Thr Lys His Phe Thr Glu Ala | | |
| 305 | 310 | 315 |
| Thr Lys Ile Gly Leu Cys Leu Phe Ser Leu Ala Cys Val Pro Phe | | |
| 320 | 325 | 330 |
| Ala Leu Val Ser Gln Leu Gln Gly Gln Thr Leu Ala Leu Ala Ala | | |
| 335 | 340 | 345 |
| Thr Cys Ser Leu Leu Gly Leu Phe Gly Phe Ser Val Gly Pro Val | | |
| 350 | 355 | 360 |
| Ala Met Glu Leu Ala Val Glu Cys Ser Phe Pro Val Gly Glu Gly | | |
| 365 | 370 | 375 |
| Ala Ala Thr Gly Met Ile Phe Val Leu Gly Gln Ala Glu Gly Ile | | |
| 380 | 385 | 390 |
| Leu Ile Met Leu Ala Met Thr Ala Leu Thr Val Arg Arg Ser Glu | | |
| 395 | 400 | 405 |

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 423

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<210> 424

<211> 4313

<212> DNA

<213> Homo sapiens

<400> 424

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tggccttgcc ttggggctct gcttgtttca taatcatcta actatgggac 200
aagggttggtc cggcagctct gggggaagga gcacggggct gatcaagcca 250
tccaggaaac actggaggac ttgtccagcc ttgaaagaac tctagtgggt 300
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 <211> 1184
 <212> PRT
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<400> 425
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 Thr Val Lys Tyr Gln Val Ser Glu Glu Val Pro Ser Gly Thr Val
 35 40 45
 Ile Gly Lys Leu Ser Gln Glu Leu Gly Arg Glu Glu Arg Arg Arg
 50 55 60
 Gln Ala Gly Ala Ala Phe Gln Val Leu Gln Leu Pro Gln Ala Leu
 65 70 75
 Pro Ile Gln Val Asp Ser Glu Glu Gly Leu Leu Ser Thr Gly Arg
 80 85 90
 Arg Leu Asp Arg Glu Gln Leu Cys Arg Gln Trp Asp Pro Cys Leu
 95 100 105
 Val Ser Phe Asp Val Leu Ala Thr Gly Asp Leu Ala Leu Ile His
 110 115 120
 Val Glu Ile Gln Val Leu Asp Ile Asn Asp His Gln Pro Arg Phe
 125 130 135
 Pro Lys Gly Glu Gln Glu Leu Glu Ile Ser Glu Ser Ala Ser Leu
 140 145 150
 Arg Thr Arg Ile Pro Leu Asp Arg Ala Leu Asp Pro Asp Thr Gly
 155 160 165
 Pro Asn Thr Leu His Thr Tyr Thr Leu Ser Pro Ser Glu His Phe
 170 175 180
 Ala Leu Asp Val Ile Val Gly Pro Asp Glu Thr Lys His Ala Glu
 185 190 195

| | | | |
|-----------------|---------------------|---------------------|-----|
| Leu Ile Val Val | Lys Glu Leu Asp Arg | Glu Ile His Ser Phe | Phe |
| 200 | | 205 | 210 |
| Asp Leu Val Leu | Thr Ala Tyr Asp Asn | Gly Asn Pro Pro Lys | Ser |
| 215 | | 220 | 225 |
| Gly Thr Ser Leu | Val Lys Val Asn Val | Leu Asp Ser Asn Asp | Asn |
| 230 | | 235 | 240 |
| Ser Pro Ala Phe | Ala Glu Ser Ser Leu | Ala Leu Glu Ile Gln | Glu |
| 245 | | 250 | 255 |
| Asp Ala Ala Pro | Gly Thr Leu Leu Ile | Lys Leu Thr Ala Thr | Asp |
| 260 | | 265 | 270 |
| Pro Asp Gln Gly | Pro Asn Gly Glu Val | Glu Phe Phe Leu Ser | Lys |
| 275 | | 280 | 285 |
| His Met Pro Pro | Glu Val Leu Asp Thr | Phe Ser Ile Asp Ala | Lys |
| 290 | | 295 | 300 |
| Thr Gly Gln Val | Ile Leu Arg Arg Pro | Leu Asp Tyr Glu Lys | Asn |
| 305 | | 310 | 315 |
| Pro Ala Tyr Glu | Val Asp Val Gln Ala | Arg Asp Leu Gly Pro | Asn |
| 320 | | 325 | 330 |
| Pro Ile Pro Ala | His Cys Lys Val Leu | Ile Lys Val Leu Asp | Val |
| 335 | | 340 | 345 |
| Asn Asp Asn Ile | Pro Ser Ile His Val | Thr Trp Ala Ser Gln | Pro |
| 350 | | 355 | 360 |
| Ser Leu Val Ser | Glu Ala Leu Pro Lys | Asp Ser Phe Ile Ala | Leu |
| 365 | | 370 | 375 |
| Val Met Ala Asp | Asp Leu Asp Ser Gly | His Asn Gly Leu Val | His |
| 380 | | 385 | 390 |
| Cys Trp Leu Ser | Gln Glu Leu Gly His | Phe Arg Leu Lys Arg | Thr |
| 395 | | 400 | 405 |
| Asn Gly Asn Thr | Tyr Met Leu Leu Thr | Asn Ala Thr Leu Asp | Arg |
| 410 | | 415 | 420 |
| Glu Gln Trp Pro | Lys Tyr Thr Leu Thr | Leu Leu Ala Gln Asp | Gln |
| 425 | | 430 | 435 |
| Gly Leu Gln Pro | Leu Ser Ala Lys Lys | Gln Leu Ser Ile Gln | Ile |
| 440 | | 445 | 450 |
| Ser Asp Ile Asn | Asp Asn Ala Pro Val | Phe Glu Lys Ser Arg | Tyr |
| 455 | | 460 | 465 |
| Glu Val Ser Thr | Arg Glu Asn Asn Leu | Pro Ser Leu His Leu | Ile |
| 470 | | 475 | 480 |
| Thr Ile Lys Ala | His Asp Ala Asp Leu | Gly Ile Asn Gly Lys | Val |

| | | | |
|---|------|------|------|
| Leu Arg Gly Gln Ala Gly Glu Pro Cys Glu Val Gly Gln Ser His | 785 | 790 | 795 |
| Lys Asp Val Asp Lys Glu Ala Met Met Glu Ala Gly Trp Asp Pro | 800 | 805 | 810 |
| Cys Leu Gln Ala Pro Phe His Leu Thr Pro Thr Leu Tyr Arg Thr | 815 | 820 | 825 |
| Leu Arg Asn Gln Gly Asn Gln Gly Ala Pro Ala Glu Ser Arg Glu | 830 | 835 | 840 |
| Val Leu Gln Asp Thr Val Asn Leu Leu Phe Asn His Pro Arg Gln | 845 | 850 | 855 |
| Arg Asn Ala Ser Arg Glu Asn Leu Asn Leu Pro Glu Pro Gln Pro | 860 | 865 | 870 |
| Ala Thr Gly Gln Pro Arg Ser Arg Pro Leu Lys Val Ala Gly Ser | 875 | 880 | 885 |
| Pro Thr Gly Arg Leu Ala Gly Asp Gln Gly Ser Glu Glu Ala Pro | 890 | 895 | 900 |
| Gln Arg Pro Pro Ala Ser Ser Ala Thr Leu Arg Arg Gln Arg His | 905 | 910 | 915 |
| Leu Asn Gly Lys Val Ser Pro Glu Lys Glu Ser Gly Pro Arg Gln | 920 | 925 | 930 |
| Ile Leu Arg Ser Leu Val Arg Leu Ser Val Ala Ala Phe Ala Glu | 935 | 940 | 945 |
| Arg Asn Pro Val Glu Glu Leu Thr Val Asp Ser Pro Pro Val Gln | 950 | 955 | 960 |
| Gln Ile Ser Gln Leu Leu Ser Leu Leu His Gln Gly Gln Phe Gln | 965 | 970 | 975 |
| Pro Lys Pro Asn His Arg Gly Asn Lys Tyr Leu Ala Lys Pro Gly | 980 | 985 | 990 |
| Gly Ser Arg Ser Ala Ile Pro Asp Thr Asp Gly Pro Ser Ala Arg | 995 | 1000 | 1005 |
| Ala Gly Gly Gln Thr Asp Pro Glu Gln Glu Glu Gly Pro Leu Asp | 1010 | 1015 | 1020 |
| Pro Glu Glu Asp Leu Ser Val Lys Gln Leu Leu Glu Glu Glu Leu | 1025 | 1030 | 1035 |
| Ser Ser Leu Leu Asp Pro Ser Thr Gly Leu Ala Leu Asp Arg Leu | 1040 | 1045 | 1050 |
| Ser Ala Pro Asp Pro Ala Trp Met Ala Arg Leu Ser Leu Pro Leu | 1055 | 1060 | 1065 |
| Thr Thr Asn Tyr Arg Asp Asn Val Ile Ser Pro Asp Ala Ala Ala | | | |

| | | |
|---|------|------|
| 1070 | 1075 | 1080 |
| Thr Glu Glu Pro Arg Thr Phe Gln Thr Phe Gly Lys Ala Glu Ala | | |
| 1085 | 1090 | 1095 |
| Pro Glu Leu Ser Pro Thr Gly Thr Arg Leu Ala Ser Thr Phe Val | | |
| 1100 | 1105 | 1110 |
| Ser Glu Met Ser Ser Leu Leu Glu Met Leu Leu Glu Gln Arg Ser | | |
| 1115 | 1120 | 1125 |
| Ser Met Pro Val Glu Ala Ala Ser Glu Ala Leu Arg Arg Leu Ser | | |
| 1130 | 1135 | 1140 |
| Val Cys Gly Arg Thr Leu Ser Leu Asp Leu Ala Thr Ser Ala Ala | | |
| 1145 | 1150 | 1155 |
| Ser Gly Met Lys Val Gln Gly Asp Pro Gly Gly Lys Thr Gly Thr | | |
| 1160 | 1165 | 1170 |
| Glu Gly Lys Ser Arg Gly Ser Ser Ser Ser Ser Arg Cys Leu | | |
| 1175 | 1180 | |

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 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

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<210> 427
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<220>
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<400> 427
 gtgacgtgga tgcttgat gttg 24

<210> 428
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<220>
 <223> Synthetic oligonucleotide probe

<400> 428
 tggacacctt cagtattgat gccaaagacag gccaggatcat tctgcgtcga 50

<210> 429
 <211> 2037

<212> DNA

<213> Homo sapiens

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<211> 455

<212> PRT

<213> Homo sapiens

<400> 430

| | | | | | | | | | | | | | | |
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| Met | Ser | Phe | Leu | Ile | Asp | Ser | Ser | Ile | Met | Ile | Thr | Ser | Gln | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Phe | Phe | Gly | Phe | Gly | Trp | Leu | Phe | Phe | Met | Arg | Gln | Leu | Phe |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Lys | Asp | Tyr | Glu | Ile | Arg | Gln | Tyr | Val | Val | Gln | Val | Ile | Phe | Ser |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Val | Thr | Phe | Ala | Phe | Ser | Cys | Thr | Met | Phe | Glu | Leu | Ile | Ile | Phe |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Glu | Ile | Leu | Gly | Val | Leu | Asn | Ser | Ser | Ser | Arg | Tyr | Phe | His | Trp |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Lys | Met | Asn | Leu | Cys | Val | Ile | Leu | Leu | Ile | Leu | Val | Phe | Met | Val |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Pro | Phe | Tyr | Ile | Gly | Tyr | Phe | Ile | Val | Ser | Asn | Ile | Arg | Leu | Leu |
| | | | 95 | | | | | | 100 | | | | | 105 |
| His | Lys | Gln | Arg | Leu | Leu | Phe | Ser | Cys | Leu | Leu | Trp | Leu | Thr | Phe |
| | | | 110 | | | | | | 115 | | | | | 120 |

| | | | |
|---|-----|-----|-----|
| Met Tyr Phe Phe Trp Lys Leu Gly Asp Pro Phe Pro Ile Leu Ser | 125 | 130 | 135 |
| Pro Lys His Gly Ile Leu Ser Ile Glu Gln Leu Ile Ser Arg Val | 140 | 145 | 150 |
| Gly Val Ile Gly Val Thr Leu Met Ala Leu Leu Ser Gly Phe Gly | 155 | 160 | 165 |
| Ala Val Asn Cys Pro Tyr Thr Tyr Met Ser Tyr Phe Leu Arg Asn | 170 | 175 | 180 |
| Val Thr Asp Thr Asp Ile Leu Ala Leu Glu Arg Arg Leu Leu Gln | 185 | 190 | 195 |
| Thr Met Asp Met Ile Ile Ser Lys Lys Lys Arg Met Ala Met Ala | 200 | 205 | 210 |
| Arg Arg Thr Met Phe Gln Lys Gly Glu Val His Asn Lys Pro Ser | 215 | 220 | 225 |
| Gly Phe Trp Gly Met Ile Lys Ser Val Thr Thr Ser Ala Ser Gly | 230 | 235 | 240 |
| Ser Glu Asn Leu Thr Leu Ile Gln Gln Glu Val Asp Ala Leu Glu | 245 | 250 | 255 |
| Glu Leu Ser Arg Gln Leu Phe Leu Glu Thr Ala Asp Leu Tyr Ala | 260 | 265 | 270 |
| Thr Lys Glu Arg Ile Glu Tyr Ser Lys Thr Phe Lys Gly Lys Tyr | 275 | 280 | 285 |
| Phe Asn Phe Leu Gly Tyr Phe Phe Ser Ile Tyr Cys Val Trp Lys | 290 | 295 | 300 |
| Ile Phe Met Ala Thr Ile Asn Ile Val Phe Asp Arg Val Gly Lys | 305 | 310 | 315 |
| Thr Asp Pro Val Thr Arg Gly Ile Glu Ile Thr Val Asn Tyr Leu | 320 | 325 | 330 |
| Gly Ile Gln Phe Asp Val Lys Phe Trp Ser Gln His Ile Ser Phe | 335 | 340 | 345 |
| Ile Leu Val Gly Ile Ile Ile Val Thr Ser Ile Arg Gly Leu Leu | 350 | 355 | 360 |
| Ile Thr Leu Thr Lys Phe Phe Tyr Ala Ile Ser Ser Ser Lys Ser | 365 | 370 | 375 |
| Ser Asn Val Ile Val Leu Leu Leu Ala Gln Ile Met Gly Met Tyr | 380 | 385 | 390 |
| Phe Val Ser Ser Val Leu Leu Ile Arg Met Ser Met Pro Leu Glu | 395 | 400 | 405 |
| Tyr Arg Thr Ile Ile Thr Glu Val Leu Gly Glu Leu Gln Phe Asn | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 410 | 415 | 420 |
| Phe Tyr His Arg Trp Phe Asp Val Ile | Phe Leu Val Ser Ala Leu | |
| 425 | 430 | 435 |
| Ser Ser Ile Leu Phe Leu Tyr Leu Ala | His Lys Gln Ala Pro Glu | |
| 440 | 445 | 450 |
| Lys Gln Met Ala Pro | | |
| 455 | | |

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35 40 45
Gly Glu Pro Gly Ser Leu Phe Gly Phe Ser Val Ala Leu His Arg
50 55 60
Gln Leu Gln Pro Arg Pro Gln Ser Trp Leu Leu Val Gly Ala Pro
65 70 75
Gln Ala Leu Ala Leu Pro Gly Gln Gln Ala Asn Arg Thr Gly Gly

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| | | | | 80 | | | | | 85 | | | | | 90 |
| Leu | Phe | Ala | Cys | Pro 95 | Leu | Ser | Leu | Glu | Glu 100 | Thr | Asp | Cys | Tyr | Arg 105 |
| Val | Asp | Ile | Asp | Gln 110 | Gly | Ala | Asp | Met | Gln 115 | Lys | Glu | Ser | Lys | Glu 120 |
| Asn | Gln | Trp | Leu | Gly 125 | Val | Ser | Val | Arg | Ser 130 | Gln | Gly | Pro | Gly | Gly 135 |
| Lys | Ile | Val | Thr | Cys 140 | Ala | His | Arg | Tyr | Glu 145 | Ala | Arg | Gln | Arg | Val 150 |
| Asp | Gln | Ile | Leu | Glu 155 | Thr | Arg | Asp | Met | Ile 160 | Gly | Arg | Cys | Phe | Val 165 |
| Leu | Ser | Gln | Asp | Leu 170 | Ala | Ile | Arg | Asp | Glu 175 | Leu | Asp | Gly | Gly | Glu 180 |
| Trp | Lys | Phe | Cys | Glu 185 | Gly | Arg | Pro | Gln | Gly 190 | His | Glu | Gln | Phe | Gly 195 |
| Phe | Cys | Gln | Gln | Gly 200 | Thr | Ala | Ala | Ala | Phe 205 | Ser | Pro | Asp | Ser | His 210 |
| Tyr | Leu | Leu | Phe | Gly 215 | Ala | Pro | Gly | Thr | Tyr 220 | Asn | Trp | Lys | Gly | Thr 225 |
| Ala | Arg | Val | Glu | Leu 230 | Cys | Ala | Gln | Gly | Ser 235 | Ala | Asp | Leu | Ala | His 240 |
| Leu | Asp | Asp | Gly | Pro 245 | Tyr | Glu | Ala | Gly | Gly 250 | Glu | Lys | Glu | Gln | Asp 255 |
| Pro | Arg | Leu | Ile | Pro 260 | Val | Pro | Ala | Asn | Ser 265 | Tyr | Phe | Gly | Phe | Ser 270 |
| Ile | Asp | Ser | Gly | Lys 275 | Gly | Leu | Val | Arg | Ala 280 | Glu | Glu | Leu | Ser | Phe 285 |
| Val | Ala | Gly | Ala | Pro 290 | Arg | Ala | Asn | His | Lys 295 | Gly | Ala | Val | Val | Ile 300 |
| Leu | Arg | Lys | Asp | Ser 305 | Ala | Ser | Arg | Leu | Val 310 | Pro | Glu | Val | Met | Leu 315 |
| Ser | Gly | Glu | Arg | Leu 320 | Thr | Ser | Gly | Phe | Gly 325 | Tyr | Ser | Leu | Ala | Val 330 |
| Ala | Asp | Leu | Asn | Ser 335 | Asp | Gly | Trp | Pro | Asp 340 | Leu | Ile | Val | Gly | Ala 345 |
| Pro | Tyr | Phe | Phe | Glu 350 | Arg | Gln | Glu | Glu | Leu 355 | Gly | Gly | Ala | Val | Tyr 360 |
| Val | Tyr | Leu | Asn | Gln 365 | Gly | Gly | His | Trp | Ala 370 | Gly | Ile | Ser | Pro | Leu 375 |

| | | | |
|-----------------|---------------------|---------------------|-----|
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| Val Leu Gly Asp | Leu Asn Gln Asp Gly | Phe Pro Asp Ile Ala | Val |
| 395 | | 400 | 405 |
| Gly Ala Pro Phe | Asp Gly Asp Gly Lys | Val Phe Ile Tyr His | Gly |
| 410 | | 415 | 420 |
| Ser Ser Leu Gly | Val Val Ala Lys Pro | Ser Gln Val Leu Glu | Gly |
| 425 | | 430 | 435 |
| Glu Ala Val Gly | Ile Lys Ser Phe Gly | Tyr Ser Leu Ser Gly | Ser |
| 440 | | 445 | 450 |
| Leu Asp Met Asp | Gly Asn Gln Tyr Pro | Asp Leu Leu Val Gly | Ser |
| 455 | | 460 | 465 |
| Leu Ala Asp Thr | Ala Val Leu Phe Arg | Ala Arg Pro Ile Leu | His |
| 470 | | 475 | 480 |
| Val Ser His Glu | Val Ser Ile Ala Pro | Arg Ser Ile Asp Leu | Glu |
| 485 | | 490 | 495 |
| Gln Pro Asn Cys | Ala Gly Gly His Ser | Val Cys Val Asp Leu | Arg |
| 500 | | 505 | 510 |
| Val Cys Phe Ser | Tyr Ile Ala Val Pro | Ser Ser Tyr Ser Pro | Thr |
| 515 | | 520 | 525 |
| Val Ala Leu Asp | Tyr Val Leu Asp Ala | Asp Thr Asp Arg Arg | Leu |
| 530 | | 535 | 540 |
| Arg Gly Gln Val | Pro Arg Val Thr Phe | Leu Ser Arg Asn Leu | Glu |
| 545 | | 550 | 555 |
| Glu Pro Lys His | Gln Ala Ser Gly Thr | Val Trp Leu Lys His | Gln |
| 560 | | 565 | 570 |
| His Asp Arg Val | Cys Gly Asp Ala Met | Phe Gln Leu Gln Glu | Asn |
| 575 | | 580 | 585 |
| Val Lys Asp Lys | Leu Arg Ala Ile Val | Val Thr Leu Ser Tyr | Ser |
| 590 | | 595 | 600 |
| Leu Gln Thr Pro | Arg Leu Arg Arg Gln | Ala Pro Gly Gln Gly | Leu |
| 605 | | 610 | 615 |
| Pro Pro Val Ala | Pro Ile Leu Asn Ala | His Gln Pro Ser Thr | Gln |
| 620 | | 625 | 630 |
| Arg Ala Glu Ile | His Phe Leu Lys Gln | Gly Cys Gly Glu Asp | Lys |
| 635 | | 640 | 645 |
| Ile Cys Gln Ser | Asn Leu Gln Leu Val | His Ala Arg Phe Cys | Thr |
| 650 | | 655 | 660 |
| Arg Val Ser Asp | Thr Glu Phe Gln Pro | Leu Pro Met Asp Val | Asp |

| 665 | | | | | 670 | | | | | 675 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Thr | Thr | Ala | Leu | Phe | Ala | Leu | Ser | Gly | Gln | Pro | Val | Ile | Gly |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Leu | Glu | Leu | Met | Val | Thr | Asn | Leu | Pro | Ser | Asp | Pro | Ala | Gln | Pro |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Gln | Ala | Asp | Gly | Asp | Asp | Ala | His | Glu | Ala | Gln | Leu | Leu | Val | Met |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Leu | Pro | Asp | Ser | Leu | His | Tyr | Ser | Gly | Val | Arg | Ala | Leu | Asp | Pro |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Ala | Glu | Lys | Pro | Leu | Cys | Leu | Ser | Asn | Glu | Asn | Ala | Ser | His | Val |
| | | | | 740 | | | | | 745 | | | | | 750 |
| Glu | Cys | Glu | Leu | Gly | Asn | Pro | Met | Lys | Arg | Gly | Ala | Gln | Val | Thr |
| | | | | 755 | | | | | 760 | | | | | 765 |
| Phe | Tyr | Leu | Ile | Leu | Ser | Thr | Ser | Gly | Ile | Ser | Ile | Glu | Thr | Thr |
| | | | | 770 | | | | | 775 | | | | | 780 |
| Glu | Leu | Glu | Val | Glu | Leu | Leu | Leu | Ala | Thr | Ile | Ser | Glu | Gln | Glu |
| | | | | 785 | | | | | 790 | | | | | 795 |
| Leu | His | Pro | Val | Ser | Ala | Arg | Ala | Arg | Val | Phe | Ile | Glu | Leu | Pro |
| | | | | 800 | | | | | 805 | | | | | 810 |
| Leu | Ser | Ile | Ala | Gly | Met | Ala | Ile | Pro | Gln | Gln | Leu | Phe | Phe | Ser |
| | | | | 815 | | | | | 820 | | | | | 825 |
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| | | | | 830 | | | | | 835 | | | | | 840 |
| Gly | Ser | Lys | Val | Lys | Tyr | Glu | Val | Thr | Val | Ser | Asn | Gln | Gly | Gln |
| | | | | 845 | | | | | 850 | | | | | 855 |
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| His | Glu | Ile | Ala | Asn | Gly | Lys | Trp | Leu | Leu | Tyr | Pro | Met | Gln | Val |
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| Glu | Leu | Glu | Gly | Gly | Gln | Gly | Pro | Gly | Gln | Lys | Gly | Leu | Cys | Ser |
| | | | | 890 | | | | | 895 | | | | | 900 |
| Pro | Arg | Pro | Asn | Ile | Leu | His | Leu | Asp | Val | Asp | Ser | Arg | Asp | Arg |
| | | | | 905 | | | | | 910 | | | | | 915 |
| Arg | Arg | Arg | Glu | Leu | Glu | Pro | Pro | Glu | Gln | Gln | Glu | Pro | Gly | Glu |
| | | | | 920 | | | | | 925 | | | | | 930 |
| Arg | Gln | Glu | Pro | Ser | Met | Ser | Trp | Trp | Pro | Val | Ser | Ser | Ala | Glu |
| | | | | 935 | | | | | 940 | | | | | 945 |
| Lys | Lys | Lys | Asn | Ile | Thr | Leu | Asp | Cys | Ala | Arg | Gly | Thr | Ala | Asn |
| | | | | 950 | | | | | 955 | | | | | 960 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|--|
| Cys | Val | Val | Phe | Ser | Cys | Pro | Leu | Tyr | Ser | Phe | Asp | Arg | Ala | Ala | |
| | | | | 965 | | | | | 970 | | | | | 975 | |
| Val | Leu | His | Val | Trp | Gly | Arg | Leu | Trp | Asn | Ser | Thr | Phe | Leu | Glu | |
| | | | | 980 | | | | | 985 | | | | | 990 | |
| Glu | Tyr | Ser | Ala | Val | Lys | Ser | Leu | Glu | Val | Ile | Val | Arg | Ala | Asn | |
| | | | | 995 | | | | | 1000 | | | | | 1005 | |
| Ile | Thr | Val | Lys | Ser | Ser | Ile | Lys | Asn | Leu | Met | Leu | Arg | Asp | Ala | |
| | | | | 1010 | | | | | 1015 | | | | | 1020 | |
| Ser | Thr | Val | Ile | Pro | Val | Met | Val | Tyr | Leu | Asp | Pro | Met | Ala | Val | |
| | | | | 1025 | | | | | 1030 | | | | | 1035 | |
| Val | Ala | Glu | Gly | Val | Pro | Trp | Trp | Val | Ile | Leu | Leu | Ala | Val | Leu | |
| | | | | 1040 | | | | | 1045 | | | | | 1050 | |
| Ala | Gly | Leu | Leu | Val | Leu | Ala | Leu | Leu | Val | Leu | Leu | Leu | Trp | Lys | |
| | | | | 1055 | | | | | 1060 | | | | | 1065 | |
| Met | Gly | Phe | Phe | Lys | Arg | Ala | Lys | His | Pro | Glu | Ala | Thr | Val | Pro | |
| | | | | 1070 | | | | | 1075 | | | | | 1080 | |
| Gln | Tyr | His | Ala | Val | Lys | Ile | Pro | Arg | Glu | Asp | Arg | Gln | Gln | Phe | |
| | | | | 1085 | | | | | 1090 | | | | | 1095 | |
| Lys | Glu | Glu | Lys | Thr | Gly | Thr | Ile | Leu | Arg | Asn | Asn | Trp | Gly | Ser | |
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| Pro | Arg | Arg | Glu | Gly | Pro | Asp | Ala | His | Pro | Ile | Leu | Ala | Ala | Asp | |
| | | | | 1115 | | | | | 1120 | | | | | 1125 | |
| Gly | His | Pro | Glu | Leu | Gly | Pro | Asp | Gly | His | Pro | Gly | Pro | Gly | Thr | |
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Ala

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 <223> Synthetic oligonucleotide probe

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| Phe | Arg | Asp | Glu | Val | Glu | Asp | Asp | Tyr | Phe | Arg | Thr | Trp | Ser | Pro | | | | | |
| | | | | 65 | | | | | 70 | | | | | 75 | | | | | |
| Gly | Lys | Pro | Phe | Asp | Gln | Ala | Leu | Asp | Pro | Ala | Lys | Asp | Pro | Cys | | | | | |
| | | | | 80 | | | | | 85 | | | | | 90 | | | | | |
| Leu | Lys | Met | Lys | Cys | Ser | Arg | His | Lys | Val | Cys | Ile | Ala | Gln | Asp | | | | | |
| | | | | 95 | | | | | 100 | | | | | 105 | | | | | |
| Ser | Gln | Thr | Ala | Val | Cys | Ile | Ser | His | Arg | Arg | Leu | Thr | His | Arg | | | | | |
| | | | | 110 | | | | | 115 | | | | | 120 | | | | | |
| Met | Lys | Glu | Ala | Gly | Val | Asp | His | Arg | Gln | Trp | Arg | Gly | Pro | Ile | | | | | |
| | | | | 125 | | | | | 130 | | | | | 135 | | | | | |
| Leu | Ser | Thr | Cys | Lys | Gln | Cys | Pro | Val | Val | Tyr | Pro | Ser | Pro | Val | | | | | |
| | | | | 140 | | | | | 145 | | | | | 150 | | | | | |
| Cys | Gly | Ser | Asp | Gly | His | Thr | Tyr | Ser | Phe | Gln | Cys | Lys | Leu | Glu | | | | | |
| | | | | 155 | | | | | 160 | | | | | 165 | | | | | |
| Tyr | Gln | Ala | Cys | Val | Leu | Gly | Lys | Gln | Ile | Ser | Val | Lys | Cys | Glu | | | | | |
| | | | | 170 | | | | | 175 | | | | | 180 | | | | | |
| Gly | His | Cys | Pro | Cys | Pro | Ser | Asp | Lys | Pro | Thr | Ser | Thr | Ser | Arg | | | | | |
| | | | | 185 | | | | | 190 | | | | | 195 | | | | | |
| Asn | Val | Lys | Arg | Ala | Cys | Ser | Asp | Leu | Glu | Phe | Arg | Glu | Val | Ala | | | | | |
| | | | | 200 | | | | | 205 | | | | | 210 | | | | | |
| Asn | Arg | Leu | Arg | Asp | Trp | Phe | Lys | Ala | Leu | His | Glu | Ser | Gly | Ser | | | | | |
| | | | | 215 | | | | | 220 | | | | | 225 | | | | | |
| Gln | Asn | Lys | Lys | Thr | Lys | Thr | Leu | Leu | Arg | Pro | Glu | Arg | Ser | Arg | | | | | |
| | | | | 230 | | | | | 235 | | | | | 240 | | | | | |
| Phe | Asp | Thr | Ser | Ile | Leu | Pro | Ile | Cys | Lys | Asp | Ser | Leu | Gly | Trp | | | | | |
| | | | | 245 | | | | | 250 | | | | | 255 | | | | | |
| Met | Phe | Asn | Arg | Leu | Asp | Thr | Asn | Tyr | Asp | Leu | Leu | Leu | Asp | Gln | | | | | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | | | |
| Ser | Glu | Leu | Arg | Ser | Ile | Tyr | Leu | Asp | Lys | Asn | Glu | Gln | Cys | Thr | | | | | |
| | | | | 275 | | | | | 280 | | | | | 285 | | | | | |
| Lys | Ala | Phe | Phe | Asn | Ser | Cys | Asp | Thr | Tyr | Lys | Asp | Ser | Leu | Ile | | | | | |
| | | | | 290 | | | | | 295 | | | | | 300 | | | | | |
| Ser | Asn | Asn | Glu | Trp | Cys | Tyr | Cys | Phe | Gln | Arg | Gln | Gln | Asp | Pro | | | | | |
| | | | | 305 | | | | | 310 | | | | | 315 | | | | | |
| Pro | Cys | Gln | Thr | Glu | Leu | Ser | Asn | Ile | Gln | Lys | Arg | Gln | Gly | Val | | | | | |
| | | | | 320 | | | | | 325 | | | | | 330 | | | | | |
| Lys | Lys | Leu | Leu | Gly | Gln | Tyr | Ile | Pro | Leu | Cys | Asp | Glu | Asp | Gly | | | | | |
| | | | | 335 | | | | | 340 | | | | | 345 | | | | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Tyr | Lys | Pro | Thr | Gln | Cys | His | Gly | Ser | Val | Gly | Gln | Cys | Trp |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Cys | Val | Asp | Arg | Tyr | Gly | Asn | Glu | Val | Met | Gly | Ser | Arg | Ile | Asn |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Gly | Val | Ala | Asp | Cys | Ala | Ile | Asp | Phe | Glu | Ile | Ser | Gly | Asp | Phe |
| | | | | 380 | | | | | 385 | | | | | 390 |
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| | | | | 395 | | | | | 400 | | | | | 405 |
| Asp | Asp | Ile | Met | Asn | Asp | Glu | Asp | Glu | Ile | Glu | Asp | Asp | Asp | Glu |
| | | | | 410 | | | | | 415 | | | | | 420 |
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 35 40 45
 Glu Cys Phe Tyr Gln Pro Met Pro Leu Lys Ala Ser Leu Glu Ile
 50 55 60
 Glu Tyr Gln Val Leu Asp Gly Ala Gly Leu Asp Ile Asp Phe His
 65 70 75
 Leu Ala Ser Pro Glu Gly Lys Thr Leu Val Phe Glu Gln Arg Lys
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 Phe Cys Phe Asp Asn Thr Phe Ser Thr Ile Ser Glu Lys Val Ile

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| | | | | 20 | | | | | 25 | | | | | 30 |
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| | | | | 35 | | | | | 40 | | | | | 45 |
| Asn | Glu | Thr | Met | Cys | Lys | Thr | Thr | Leu | Tyr | Ser | Arg | Glu | Ile | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Tyr | Pro | Phe | Gln | Gly | Asp | Ser | Thr | Val | Thr | Lys | Ser | Cys | Ala | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Cys | Lys | Pro | Ser | Asp | Val | Asp | Gly | Ile | Gly | Gln | Thr | Leu | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Val | Ser | Cys | Cys | Asn | Thr | Glu | Leu | Cys | Asn | Val | Asp | Gly | Ala | Pro |
| | | | | 95 | | | | | 100 | | | | | 105 |
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| | | | | 110 | | | | | 115 | | | | | 120 |
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gcgcagcggg agctaccggg gtctttgtcg cgatggtagc ggcggtcttc 200
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| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ile | Asp | Asn | Tyr | Gln | Pro | Tyr | Pro | Cys | Ala | Glu | Asp | Glu | Glu | 80 | 85 | 90 |
| Cys | Gly | Thr | Asp | Glu | Tyr | Cys | Ala | Ser | Pro | Thr | Arg | Gly | Gly | Asp | 95 | 100 | 105 |
| Ala | Gly | Val | Gln | Ile | Cys | Leu | Ala | Cys | Arg | Lys | Arg | Arg | Lys | Arg | 110 | 115 | 120 |
| Cys | Met | Arg | His | Ala | Met | Cys | Cys | Pro | Gly | Asn | Tyr | Cys | Lys | Asn | 125 | 130 | 135 |
| Gly | Ile | Cys | Val | Ser | Ser | Asp | Gln | Asn | His | Phe | Arg | Gly | Glu | Ile | 140 | 145 | 150 |
| Glu | Glu | Thr | Ile | Thr | Glu | Ser | Phe | Gly | Asn | Asp | His | Ser | Thr | Leu | 155 | 160 | 165 |
| Asp | Gly | Tyr | Ser | Arg | Arg | Thr | Thr | Leu | Ser | Ser | Lys | Met | Tyr | His | 170 | 175 | 180 |
| Thr | Lys | Gly | Gln | Glu | Gly | Ser | Val | Cys | Leu | Arg | Ser | Ser | Asp | Cys | 185 | 190 | 195 |
| Ala | Ser | Gly | Leu | Cys | Cys | Ala | Arg | His | Phe | Trp | Ser | Lys | Ile | Cys | 200 | 205 | 210 |
| Lys | Pro | Val | Leu | Lys | Glu | Gly | Gln | Val | Cys | Thr | Lys | His | Arg | Arg | 215 | 220 | 225 |
| Lys | Gly | Ser | His | Gly | Leu | Glu | Ile | Phe | Gln | Arg | Cys | Tyr | Cys | Gly | 230 | 235 | 240 |
| Glu | Gly | Leu | Ser | Cys | Arg | Ile | Gln | Lys | Asp | His | His | Gln | Ala | Ser | 245 | 250 | 255 |
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 509, 556
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<211> 4040

<212> DNA

<213> Homo sapiens

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<210> 459

<211> 747

<212> PRT

<213> Homo sapiens

<400> 459

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| Met | Gly | Val | Trp | Leu | Asn | Lys | Asp | Asp | Tyr | Ile | Arg | Asp | Leu | Lys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Arg | Ile | Ile | Leu | Cys | Phe | Leu | Ile | Val | Tyr | Met | Ala | Ile | Leu | Val |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Gly | Thr | Asp | Gln | Asp | Phe | Tyr | Ser | Leu | Leu | Gly | Val | Ser | Lys | Thr |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Ala | Ser | Ser | Arg | Glu | Ile | Arg | Gln | Ala | Phe | Lys | Lys | Leu | Ala | Leu |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Lys | Leu | His | Pro | Asp | Lys | Asn | Pro | Asn | Asn | Pro | Asn | Ala | His | Gly |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Asp | Phe | Leu | Lys | Ile | Asn | Arg | Ala | Tyr | Glu | Val | Leu | Lys | Asp | Glu |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Asp | Leu | Arg | Lys | Lys | Tyr | Asp | Lys | Tyr | Gly | Glu | Lys | Gly | Leu | Glu |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Asp | Asn | Gln | Gly | Gly | Gln | Tyr | Glu | Ser | Trp | Asn | Tyr | Tyr | Arg | Tyr |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Asp | Phe | Gly | Ile | Tyr | Asp | Asp | Asp | Pro | Glu | Ile | Ile | Thr | Leu | Glu |
| | | | 125 | | | | | | 130 | | | | | 135 |
| Arg | Arg | Glu | Phe | Asp | Ala | Ala | Val | Asn | Ser | Gly | Glu | Leu | Trp | Phe |
| | | | 140 | | | | | | 145 | | | | | 150 |
| Val | Asn | Phe | Tyr | Ser | Pro | Gly | Cys | Ser | His | Cys | His | Asp | Leu | Ala |
| | | | 155 | | | | | | 160 | | | | | 165 |
| Pro | Thr | Trp | Arg | Asp | Phe | Ala | Lys | Glu | Val | Asp | Gly | Leu | Leu | Arg |
| | | | 170 | | | | | | 175 | | | | | 180 |
| Ile | Gly | Ala | Val | Asn | Cys | Gly | Asp | Asp | Arg | Met | Leu | Cys | Arg | Met |
| | | | 185 | | | | | | 190 | | | | | 195 |
| Lys | Gly | Val | Asn | Ser | Tyr | Pro | Ser | Leu | Phe | Ile | Phe | Arg | Ser | Gly |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Ala | Glu | Gln | Ile | Leu | Glu | Phe | Ile | Glu | Asp | Leu | Met | Asn | Pro | 500 | 505 | 510 |
| Ser | Val | Val | Ser | Leu | Thr | Pro | Thr | Thr | Phe | Asn | Glu | Leu | Val | Thr | 515 | 520 | 525 |
| Gln | Arg | Lys | His | Asn | Glu | Val | Trp | Met | Val | Asp | Phe | Tyr | Ser | Pro | 530 | 535 | 540 |
| Trp | Cys | His | Pro | Cys | Gln | Val | Leu | Met | Pro | Glu | Trp | Lys | Arg | Met | 545 | 550 | 555 |
| Ala | Arg | Thr | Leu | Thr | Gly | Leu | Ile | Asn | Val | Gly | Ser | Ile | Asp | Cys | 560 | 565 | 570 |
| Gln | Gln | Tyr | His | Ser | Phe | Cys | Ala | Gln | Glu | Asn | Val | Gln | Arg | Tyr | 575 | 580 | 585 |
| Pro | Glu | Ile | Arg | Phe | Phe | Pro | Pro | Lys | Ser | Asn | Lys | Ala | Tyr | Gln | 590 | 595 | 600 |
| Tyr | His | Ser | Tyr | Asn | Gly | Trp | Asn | Arg | Asp | Ala | Tyr | Ser | Leu | Arg | 605 | 610 | 615 |
| Ile | Trp | Gly | Leu | Gly | Phe | Leu | Pro | Gln | Val | Ser | Thr | Asp | Leu | Thr | 620 | 625 | 630 |
| Pro | Gln | Thr | Phe | Ser | Glu | Lys | Val | Leu | Gln | Gly | Lys | Asn | His | Trp | 635 | 640 | 645 |
| Val | Ile | Asp | Phe | Tyr | Ala | Pro | Trp | Cys | Gly | Pro | Cys | Gln | Asn | Phe | 650 | 655 | 660 |
| Ala | Pro | Glu | Phe | Glu | Leu | Leu | Ala | Arg | Met | Ile | Lys | Gly | Lys | Val | 665 | 670 | 675 |
| Lys | Ala | Gly | Lys | Val | Asp | Cys | Gln | Ala | Tyr | Ala | Gln | Thr | Cys | Gln | 680 | 685 | 690 |
| Lys | Ala | Gly | Ile | Arg | Ala | Tyr | Pro | Thr | Val | Lys | Phe | Tyr | Phe | Tyr | 695 | 700 | 705 |
| Glu | Arg | Ala | Lys | Arg | Asn | Phe | Gln | Glu | Glu | Gln | Ile | Asn | Thr | Arg | 710 | 715 | 720 |
| Asp | Ala | Lys | Ala | Ile | Ala | Ala | Leu | Ile | Ser | Glu | Lys | Leu | Glu | Thr | 725 | 730 | 735 |
| Leu | Arg | Asn | Gln | Gly | Lys | Arg | Asn | Lys | Asp | Glu | Leu | | | | 740 | 745 | |

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<211> 24

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 461

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 461

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<210> 462

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 462

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<210> 463

<211> 1818

<212> DNA

<213> Homo sapiens

<400> 463

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caccatcatc tactcctact tggagtcgtt ggtgaagttt ttcattcctc 150

agaggagaaa atctgtggct ggggagattg ttctcattac tggagctggg 200

catggaatag gcaggcagac tacttatgaa ttgcaaaac gacagagcat 250

attggttctg tgggatatta ataagcgcg tgtggaggaa actgcagctg 300

agtgccgaaa actaggcgtc actgcgcatg cgtatgtggt agactgcagc 350

aacagagaag agatctatcg ctctctaaat caggatgaaga aagaagtggg 400

tgatgtaaca atcgtggtga ataatgctgg gacagtatat ccagccgatc 450

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 <212> PRT
 <213> Homo sapiens

<400> 464
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 Tyr Ser Tyr Leu Glu Ser Leu Val Lys Phe Phe Ile Pro Gln Arg
 20 25 30

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|
| Arg | Lys | Ser | Val | Ala | Gly | Glu | Ile | Val | Leu | Ile | Thr | Gly | Ala | Gly | | 35 | 40 | 45 |
| His | Gly | Ile | Gly | Arg | Gln | Thr | Thr | Tyr | Glu | Phe | Ala | Lys | Arg | Gln | | 50 | 55 | 60 |
| Ser | Ile | Leu | Val | Leu | Trp | Asp | Ile | Asn | Lys | Arg | Gly | Val | Glu | Glu | | 65 | 70 | 75 |
| Thr | Ala | Ala | Glu | Cys | Arg | Lys | Leu | Gly | Val | Thr | Ala | His | Ala | Tyr | | 80 | 85 | 90 |
| Val | Val | Asp | Cys | Ser | Asn | Arg | Glu | Glu | Ile | Tyr | Arg | Ser | Leu | Asn | | 95 | 100 | 105 |
| Gln | Val | Lys | Lys | Glu | Val | Gly | Asp | Val | Thr | Ile | Val | Val | Asn | Asn | | 110 | 115 | 120 |
| Ala | Gly | Thr | Val | Tyr | Pro | Ala | Asp | Leu | Leu | Ser | Thr | Lys | Asp | Glu | | 125 | 130 | 135 |
| Glu | Ile | Thr | Lys | Thr | Phe | Glu | Val | Asn | Ile | Leu | Gly | His | Phe | Trp | | 140 | 145 | 150 |
| Ile | Thr | Lys | Ala | Leu | Leu | Pro | Ser | Met | Met | Glu | Arg | Asn | His | Gly | | 155 | 160 | 165 |
| His | Ile | Val | Thr | Val | Ala | Ser | Val | Cys | Gly | His | Glu | Gly | Ile | Pro | | 170 | 175 | 180 |
| Tyr | Leu | Ile | Pro | Tyr | Cys | Ser | Ser | Lys | Phe | Ala | Ala | Val | Gly | Phe | | 185 | 190 | 195 |
| His | Arg | Gly | Leu | Thr | Ser | Glu | Leu | Gln | Ala | Leu | Gly | Lys | Thr | Gly | | 200 | 205 | 210 |
| Ile | Lys | Thr | Ser | Cys | Leu | Cys | Pro | Val | Phe | Val | Asn | Thr | Gly | Phe | | 215 | 220 | 225 |
| Thr | Lys | Asn | Pro | Ser | Thr | Arg | Leu | Trp | Pro | Val | Leu | Glu | Thr | Asp | | 230 | 235 | 240 |
| Glu | Val | Val | Arg | Ser | Leu | Ile | Asp | Gly | Ile | Leu | Thr | Asn | Lys | Lys | | 245 | 250 | 255 |
| Met | Ile | Phe | Val | Pro | Ser | Tyr | Ile | Asn | Ile | Phe | Leu | Arg | Leu | Gln | | 260 | 265 | 270 |
| Lys | Phe | Leu | Pro | Glu | Arg | Ala | Ser | Ala | Ile | Leu | Asn | Arg | Met | Gln | | 275 | 280 | 285 |
| Asn | Ile | Gln | Phe | Glu | Ala | Val | Val | Gly | His | Lys | Ile | Lys | Met | Lys | | 290 | 295 | 300 |

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<211> 1547

<212> DNA

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<400> 465

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gagagggccc agcccgcccc gggcaggatg accaaggccc ggctgttccg 150
gctgtggctg gtgctggggg cgggtgttcat gatcctgctg atcatcgtgt 200
actgggacag cgcaggcgcc ggcacttct acttgacac gtccttctct 250
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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Thr | Lys | Leu | Ala | Leu | Pro | Tyr | Leu | Arg | Lys | Ser | Gln | Gly | Asn | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Val | Ile | Asn | Ile | Ser | Ser | Leu | Val | Gly | Ala | Ile | Gly | Gln | Ala | Gln | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ala | Val | Pro | Tyr | Val | Ala | Thr | Lys | Gly | Ala | Val | Thr | Ala | Met | Thr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Lys | Ala | Leu | Ala | Leu | Asp | Glu | Ser | Pro | Tyr | Gly | Val | Arg | Val | Asn | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Cys | Ile | Ser | Pro | Gly | Asn | Ile | Trp | Thr | Pro | Leu | Trp | Glu | Glu | Leu | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ala | Ala | Leu | Met | Pro | Asp | Pro | Arg | Ala | Thr | Ile | Arg | Glu | Gly | Met | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Leu | Ala | Gln | Pro | Leu | Gly | Arg | Met | Gly | Gln | Pro | Ala | Glu | Val | Gly | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ala | Ala | Ala | Val | Phe | Leu | Ala | Ser | Glu | Ala | Asn | Phe | Cys | Thr | Gly | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Ile | Glu | Leu | Leu | Val | Thr | Gly | Gly | Ala | Glu | Leu | Gly | Tyr | Gly | Cys | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Lys | Ala | Ser | Arg | Ser | Thr | Pro | Val | Asp | Ala | Pro | Asp | Ile | Pro | Ser | |
| | | | | 260 | | | | | 265 | | | | | 270 | |

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 <211> 687
 <212> DNA
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<211> 201

<212> PRT

<213> Homo sapiens

<400> 477

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| Met | Glu | Tyr | His | Pro | Asp | Leu | Glu | Asn | Leu | Asp | Glu | Asp | Gly | Tyr | 1 | 5 | 10 | 15 |
| Thr | Gln | Leu | His | Phe | Asp | Ser | Gln | Ser | Asn | Thr | Arg | Ile | Ala | Val | 20 | 25 | 30 | |
| Val | Ser | Glu | Lys | Gly | Ser | Cys | Ala | Ala | Ser | Pro | Pro | Trp | Arg | Leu | 35 | 40 | 45 | |
| Ile | Ala | Val | Ile | Leu | Gly | Ile | Leu | Cys | Leu | Val | Ile | Leu | Val | Ile | 50 | 55 | 60 | |
| Ala | Val | Val | Leu | Gly | Thr | Met | Gly | Val | Leu | Ser | Ser | Pro | Cys | Pro | 65 | 70 | 75 | |
| Pro | Asn | Trp | Ile | Ile | Tyr | Glu | Lys | Ser | Cys | Tyr | Leu | Phe | Ser | Met | 80 | 85 | 90 | |
| Ser | Leu | Asn | Ser | Trp | Asp | Gly | Ser | Lys | Arg | Gln | Cys | Trp | Gln | Leu | 95 | 100 | 105 | |
| Gly | Ser | Asn | Leu | Leu | Lys | Ile | Asp | Ser | Ser | Asn | Glu | Leu | Gly | Phe | 110 | 115 | 120 | |
| Ile | Val | Lys | Gln | Val | Ser | Ser | Gln | Pro | Asp | Asn | Ser | Phe | Trp | Ile | 125 | 130 | 135 | |
| Gly | Leu | Ser | Arg | Pro | Gln | Thr | Glu | Val | Pro | Trp | Leu | Trp | Glu | Asp | 140 | 145 | 150 | |
| Gly | Ser | Thr | Phe | Ser | Ser | Asn | Leu | Phe | Gln | Ile | Arg | Thr | Thr | Ala | 155 | 160 | 165 | |
| Thr | Gln | Glu | Asn | Pro | Ser | Pro | Asn | Cys | Val | Trp | Ile | His | Val | Ser | | | | |

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 Glu Lys Lys Phe Ser Met
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<210> 480
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<220>
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<400> 480
 atcctcccag agccatggta cctc 24

<210> 481
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<220>
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<210> 482
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 <212> DNA
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<400> 482

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 <211> 693
 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Leu His Tyr Lys Pro Thr Pro Asp Leu Arg Ile Ser Ile Glu Asn
 50 55 60
 Ser Glu Glu Ala Leu Thr Val His Ala Pro Phe Pro Ala Ala His
 65 70 75

Met Arg Leu Gln Ala Arg Gly Gly Pro Ser Pro Leu Lys Ser Asn
665 670 675

Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser Thr Ser Ser
680 685 690

Ser Arg Ile

<210> 484
<211> 516
<212> DNA
<213> Homo sapiens

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<222> 68, 70, 84, 147
<223> unknown base

<400> 484
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tttctgttca acatgg 516

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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 485
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<210> 486
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 486
tggaggccta gatgaggctg gacg 24

<210> 487
<211> 2849
<212> DNA
<213> Homo sapiens

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<221> unsure
<222> 2715
<223> unknown base

<400> 487
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<210> 488

<211> 345

<212> PRT

<213> Homo sapiens

<400> 488

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| Met | Ser | Leu | Phe | Gly | Leu | Leu | Leu | Leu | Thr | Ser | Ala | Leu | Ala | Gly | 1 | 5 | 10 | 15 |
| Gln | Arg | Gln | Gly | Thr | Gln | Ala | Glu | Ser | Asn | Leu | Ser | Ser | Lys | Phe | 20 | 25 | 30 | |
| Gln | Phe | Ser | Ser | Asn | Lys | Glu | Gln | Asn | Gly | Val | Gln | Asp | Pro | Gln | 35 | 40 | 45 | |
| His | Glu | Arg | Ile | Ile | Thr | Val | Ser | Thr | Asn | Gly | Ser | Ile | His | Ser | 50 | 55 | 60 | |
| Pro | Arg | Phe | Pro | His | Thr | Tyr | Pro | Arg | Asn | Thr | Val | Leu | Val | Trp | 65 | 70 | 75 | |
| Arg | Leu | Val | Ala | Val | Glu | Glu | Asn | Val | Trp | Ile | Gln | Leu | Thr | Phe | 80 | 85 | 90 | |
| Asp | Glu | Arg | Phe | Gly | Leu | Glu | Asp | Pro | Glu | Asp | Asp | Ile | Cys | Lys | 95 | 100 | 105 | |
| Tyr | Asp | Phe | Val | Glu | Val | Glu | Glu | Pro | Ser | Asp | Gly | Thr | Ile | Leu | 110 | 115 | 120 | |
| Gly | Arg | Trp | Cys | Gly | Ser | Gly | Thr | Val | Pro | Gly | Lys | Gln | Ile | Ser | 125 | 130 | 135 | |
| Lys | Gly | Asn | Gln | Ile | Arg | Ile | Arg | Phe | Val | Ser | Asp | Glu | Tyr | Phe | 140 | 145 | 150 | |
| Pro | Ser | Glu | Pro | Gly | Phe | Cys | Ile | His | Tyr | Asn | Ile | Val | Met | Pro | 155 | 160 | 165 | |
| Gln | Phe | Thr | Glu | Ala | Val | Ser | Pro | Ser | Val | Leu | Pro | Pro | Ser | Ala | 170 | 175 | 180 | |
| Leu | Pro | Leu | Asp | Leu | Leu | Asn | Asn | Ala | Ile | Thr | Ala | Phe | Ser | Thr | 185 | 190 | 195 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Glu | Asp | Leu | Ile | Arg | Tyr | Leu | Glu | Pro | Glu | Arg | Trp | Gln | Leu | |
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| Asp | Leu | Glu | Asp | Leu | Tyr | Arg | Pro | Thr | Trp | Gln | Leu | Leu | Gly | Lys | |
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| Ala | Phe | Val | Phe | Gly | Arg | Lys | Ser | Arg | Val | Val | Asp | Leu | Asn | Leu | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Thr | Glu | Glu | Val | Arg | Leu | Tyr | Ser | Cys | Thr | Pro | Arg | Asn | Phe | |
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| Ser | Val | Ser | Ile | Arg | Glu | Glu | Leu | Lys | Arg | Thr | Asp | Thr | Ile | Phe | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Trp | Pro | Gly | Cys | Leu | Leu | Val | Lys | Arg | Cys | Gly | Gly | Asn | Cys | Ala | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Cys | Cys | Leu | His | Asn | Cys | Asn | Glu | Cys | Gln | Cys | Val | Pro | Ser | Lys | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Val | Thr | Lys | Lys | Tyr | His | Glu | Val | Leu | Gln | Leu | Arg | Pro | Lys | Thr | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Gly | Val | Arg | Gly | Leu | His | Lys | Ser | Leu | Thr | Asp | Val | Ala | Leu | Glu | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| His | His | Glu | Glu | Cys | Asp | Cys | Val | Cys | Arg | Gly | Ser | Thr | Gly | Gly | |
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<223> Synthetic oligonucleotide probe

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<210> 490

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 491

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 491

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<210> 492

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 492

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<210> 493

<211> 21

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 493

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<210> 494

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 494

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<210> 495

<211> 3283

<212> DNA

<213> Homo sapiens

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<212> PRT

<213> Homo sapiens

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| Phe | Asn | Ile | Ile | Leu | Ile | Ser | Lys | Leu | Leu | Gly | Ala | Arg | Trp | Phe | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Pro | Lys | Thr | Leu | Pro | Cys | Asp | Val | Thr | Leu | Asp | Val | Pro | Lys | Asn | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| His | Val | Ile | Val | Asp | Cys | Thr | Asp | Lys | His | Leu | Thr | Glu | Ile | Pro | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Gly | Gly | Ile | Pro | Thr | Asn | Thr | Thr | Asn | Leu | Thr | Leu | Thr | Ile | Asn | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| His | Ile | Pro | Asp | Ile | Ser | Pro | Ala | Ser | Phe | His | Arg | Leu | Asp | His | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Val | Glu | Ile | Asp | Phe | Arg | Cys | Asn | Cys | Val | Pro | Ile | Pro | Leu | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Gly | Ser | Lys | Asn | Asn | Met | Cys | Ile | Lys | Arg | Leu | Gln | Ile | Lys | Pro | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Arg | Ser | Phe | Ser | Gly | Leu | Thr | Tyr | Leu | Lys | Ser | Leu | Tyr | Leu | Asp | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Asn | Gln | Leu | Leu | Glu | Ile | Pro | Gln | Gly | Leu | Pro | Pro | Ser | Leu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gln | Leu | Leu | Ser | Leu | Glu | Ala | Asn | Asn | Ile | Phe | Ser | Ile | Arg | Lys | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Glu | Asn | Leu | Thr | Glu | Leu | Ala | Asn | Ile | Glu | Ile | Leu | Tyr | Leu | Gly | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Gln | Asn | Cys | Tyr | Tyr | Arg | Asn | Pro | Cys | Tyr | Val | Ser | Tyr | Ser | Ile | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
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| Leu | Lys | Asp | Asn | Asn | Val | Thr | Ala | Val | Pro | Thr | Val | Leu | Pro | Ser | |
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| Thr | Leu | Thr | Glu | Leu | Tyr | Leu | Tyr | Asn | Asn | Met | Ile | Ala | Lys | Ile | |
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| Gln | Glu | Asp | Asp | Phe | Asn | Asn | Leu | Asn | Gln | Leu | Gln | Ile | Leu | Asp | |
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| | | | |
|---|-----|-----|-----|
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| Ala Pro Cys Lys Asn Asn Ser Pro Leu Gln Ile Pro Val Asn Ala | 275 | 280 | 285 |
| Phe Asp Ala Leu Thr Glu Leu Lys Val Leu Arg Leu His Ser Asn | 290 | 295 | 300 |
| Ser Leu Gln His Val Pro Pro Arg Trp Phe Lys Asn Ile Asn Lys | 305 | 310 | 315 |
| Leu Gln Glu Leu Asp Leu Ser Gln Asn Phe Leu Ala Lys Glu Ile | 320 | 325 | 330 |
| Gly Asp Ala Lys Phe Leu His Phe Leu Pro Ser Leu Ile Gln Leu | 335 | 340 | 345 |
| Asp Leu Ser Phe Asn Phe Glu Leu Gln Val Tyr Arg Ala Ser Met | 350 | 355 | 360 |
| Asn Leu Ser Gln Ala Phe Ser Ser Leu Lys Ser Leu Lys Ile Leu | 365 | 370 | 375 |
| Arg Ile Arg Gly Tyr Val Phe Lys Glu Leu Lys Ser Phe Asn Leu | 380 | 385 | 390 |
| Ser Pro Leu His Asn Leu Gln Asn Leu Glu Val Leu Asp Leu Gly | 395 | 400 | 405 |
| Thr Asn Phe Ile Lys Ile Ala Asn Leu Ser Met Phe Lys Gln Phe | 410 | 415 | 420 |
| Lys Arg Leu Lys Val Ile Asp Leu Ser Val Asn Lys Ile Ser Pro | 425 | 430 | 435 |
| Ser Gly Asp Ser Ser Glu Val Gly Phe Cys Ser Asn Ala Arg Thr | 440 | 445 | 450 |
| Ser Val Glu Ser Tyr Glu Pro Gln Val Leu Glu Gln Leu His Tyr | 455 | 460 | 465 |
| Phe Arg Tyr Asp Lys Tyr Ala Arg Ser Cys Arg Phe Lys Asn Lys | 470 | 475 | 480 |
| Glu Ala Ser Phe Met Ser Val Asn Glu Ser Cys Tyr Lys Tyr Gly | 485 | 490 | 495 |
| Gln Thr Leu Asp Leu Ser Lys Asn Ser Ile Phe Phe Val Lys Ser | 500 | 505 | 510 |
| Ser Asp Phe Gln His Leu Ser Phe Leu Lys Cys Leu Asn Leu Ser | 515 | 520 | 525 |
| Gly Asn Leu Ile Ser Gln Thr Leu Asn Gly Ser Glu Phe Gln Pro | 530 | 535 | 540 |
| Leu Ala Glu Leu Arg Tyr Leu Asp Phe Ser Asn Asn Arg Leu Asp | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 545 | 550 | 555 |
| Leu Leu His Ser Thr Ala Phe Glu Glu | Leu His Lys Leu Glu Val | |
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| Leu Asp Ile Ser Ser Asn Ser His Tyr | Phe Gln Ser Glu Gly Ile | |
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| Thr His Met Leu Asn Phe Thr Lys Asn | Leu Lys Val Leu Gln Lys | |
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| Leu Met Met Asn Asp Asn Asp Ile Ser | Ser Ser Thr Ser Arg Thr | |
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| Met Glu Ser Glu Ser Leu Arg Thr Leu | Glu Phe Arg Gly Asn His | |
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| Leu Asp Val Leu Trp Arg Glu Gly Asp | Asn Arg Tyr Leu Gln Leu | |
| 635 | 640 | 645 |
| Phe Lys Asn Leu Leu Lys Leu Glu Glu | Leu Asp Ile Ser Lys Asn | |
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| Ser Leu Ser Phe Leu Pro Ser Gly Val | Phe Asp Gly Met Pro Pro | |
| 665 | 670 | 675 |
| Asn Leu Lys Asn Leu Ser Leu Ala Lys | Asn Gly Leu Lys Ser Phe | |
| 680 | 685 | 690 |
| Ser Trp Lys Lys Leu Gln Cys Leu Lys | Asn Leu Glu Thr Leu Asp | |
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| Leu Ser His Asn Gln Leu Thr Thr Val | Pro Glu Arg Leu Ser Asn | |
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| Cys Ser Arg Ser Leu Lys Asn Leu Ile | Leu Lys Asn Asn Gln Ile | |
| 725 | 730 | 735 |
| Arg Ser Leu Thr Lys Tyr Phe Leu Gln | Asp Ala Phe Gln Leu Arg | |
| 740 | 745 | 750 |
| Tyr Leu Asp Leu Ser Ser Asn Lys Ile | Gln Met Ile Gln Lys Thr | |
| 755 | 760 | 765 |
| Ser Phe Pro Glu Asn Val Leu Asn Asn | Leu Lys Met Leu Leu Leu | |
| 770 | 775 | 780 |
| His His Asn Arg Phe Leu Cys Thr Cys | Asp Ala Val Trp Phe Val | |
| 785 | 790 | 795 |
| Trp Trp Val Asn His Thr Glu Val Thr | Ile Pro Tyr Leu Ala Thr | |
| 800 | 805 | 810 |
| Asp Val Thr Cys Val Gly Pro Gly Ala | His Lys Gly Gln Ser Val | |
| 815 | 820 | 825 |
| Ile Ser Leu Asp Leu Tyr Thr Cys Glu | Leu Asp Leu Thr Asn Leu | |
| 830 | 835 | 840 |

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| | | |
|-----------------|-------------------------|-------------------------|
| Val Gly Lys Tyr | Val Thr Glu Leu Asp | Leu Ser Asp Asn Phe Ile |
| 65 | 70 | 75 |
| Thr His Ile Thr | Asn Glu Ser Phe Gln Gly | Leu Gln Asn Leu Thr |
| 80 | 85 | 90 |
| Lys Ile Asn Leu | Asn His Asn Pro Asn Val | Gln His Gln Asn Gly |
| 95 | 100 | 105 |
| Asn Pro Gly Ile | Gln Ser Asn Gly Leu Asn | Ile Thr Asp Gly Ala |
| 110 | 115 | 120 |
| Phe Leu Asn Leu | Lys Asn Leu Arg Glu Leu | Leu Leu Leu Glu Asp Asn |
| 125 | 130 | 135 |
| Gln Leu Pro Gln | Ile Pro Ser Gly Leu Pro | Glu Ser Leu Thr Glu |
| 140 | 145 | 150 |
| Leu Ser Leu Ile | Gln Asn Asn Ile Tyr Asn | Ile Thr Lys Glu Gly |
| 155 | 160 | 165 |
| Ile Ser Arg Leu | Ile Asn Leu Lys Asn Leu | Tyr Leu Ala Trp Asn |
| 170 | 175 | 180 |
| Cys Tyr Phe Asn | Lys Val Cys Glu Lys Thr | Asn Ile Glu Asp Gly |
| 185 | 190 | 195 |
| Val Phe Glu Thr | Leu Thr Asn Leu Glu Leu | Leu Ser Leu Ser Phe |
| 200 | 205 | 210 |
| Asn Ser Leu Ser | His Val Pro Pro Lys Leu | Pro Ser Ser Leu Arg |
| 215 | 220 | 225 |
| Lys Leu Phe Leu | Ser Asn Thr Gln Ile Lys | Tyr Ile Ser Glu Glu |
| 230 | 235 | 240 |
| Asp Phe Lys Gly | Leu Ile Asn Leu Thr Leu | Leu Asp Leu Ser Gly |
| 245 | 250 | 255 |
| Asn Cys Pro Arg | Cys Phe Asn Ala Pro Phe | Pro Cys Val Pro Cys |
| 260 | 265 | 270 |
| Asp Gly Gly Ala | Ser Ile Asn Ile Asp Arg | Phe Ala Phe Gln Asn |
| 275 | 280 | 285 |
| Leu Thr Gln Leu | Arg Tyr Leu Asn Leu Ser | Ser Thr Ser Leu Arg |
| 290 | 295 | 300 |
| Lys Ile Asn Ala | Ala Trp Phe Lys Asn Met | Pro His Leu Lys Val |
| 305 | 310 | 315 |
| Leu Asp Leu Glu | Phe Asn Tyr Leu Val Gly | Glu Ile Val Ser Gly |
| 320 | 325 | 330 |
| Ala Phe Leu Thr | Met Leu Pro Arg Leu Glu | Ile Leu Asp Leu Ser |
| 335 | 340 | 345 |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|-----|-----|
| Phe Asn Tyr Ile | Lys Gly Ser Tyr Pro | Gln His Ile Asn Ile Ser | 350 | 355 | 360 |
| Arg Asn Phe Ser | Lys Leu Leu Ser Leu | Arg Ala Leu His Leu Arg | 365 | 370 | 375 |
| Gly Tyr Val Phe | Gln Glu Leu Arg Glu | Asp Asp Phe Gln Pro Leu | 380 | 385 | 390 |
| Met Gln Leu Pro | Asn Leu Ser Thr Ile | Asn Leu Gly Ile Asn Phe | 395 | 400 | 405 |
| Ile Lys Gln Ile | Asp Phe Lys Leu Phe | Gln Asn Phe Ser Asn Leu | 410 | 415 | 420 |
| Glu Ile Ile Tyr | Leu Ser Glu Asn Arg | Ile Ser Pro Leu Val Lys | 425 | 430 | 435 |
| Asp Thr Arg Gln | Ser Tyr Ala Asn Ser | Ser Ser Phe Gln Arg His | 440 | 445 | 450 |
| Ile Arg Lys Arg | Arg Ser Thr Asp Phe | Glu Phe Asp Pro His Ser | 455 | 460 | 465 |
| Asn Phe Tyr His | Phe Thr Arg Pro Leu | Ile Lys Pro Gln Cys Ala | 470 | 475 | 480 |
| Ala Tyr Gly Lys | Ala Leu Asp Leu Ser | Leu Asn Ser Ile Phe Phe | 485 | 490 | 495 |
| Ile Gly Pro Asn | Gln Phe Glu Asn Leu | Pro Asp Ile Ala Cys Leu | 500 | 505 | 510 |
| Asn Leu Ser Ala | Asn Ser Asn Ala Gln | Val Leu Ser Gly Thr Glu | 515 | 520 | 525 |
| Phe Ser Ala Ile | Pro His Val Lys Tyr | Leu Asp Leu Thr Asn Asn | 530 | 535 | 540 |
| Arg Leu Asp Phe | Asp Asn Ala Ser Ala | Leu Thr Glu Leu Ser Asp | 545 | 550 | 555 |
| Leu Glu Val Leu | Asp Leu Ser Tyr Asn | Ser His Tyr Phe Arg Ile | 560 | 565 | 570 |
| Ala Gly Val Thr | His His Leu Glu Phe | Ile Gln Asn Phe Thr Asn | 575 | 580 | 585 |
| Leu Lys Val Leu | Asn Leu Ser His Asn | Asn Ile Tyr Thr Leu Thr | 590 | 595 | 600 |
| Asp Lys Tyr Asn | Leu Glu Ser Lys Ser | Leu Val Glu Leu Val Phe | 605 | 610 | 615 |
| Ser Gly Asn Arg | Leu Asp Ile Leu Trp | Asn Asp Asp Asp Asn Arg | 620 | 625 | 630 |
| Tyr Ile Ser Ile | Phe Lys Gly Leu Lys | Asn Leu Thr Arg Leu Asp | | | |

| | | |
|-------------------------------------|-------------------------|-----|
| 635 | 640 | 645 |
| Leu Ser Leu Asn Arg Leu Lys His Ile | Pro Asn Glu Ala Phe Leu | |
| 650 | 655 | 660 |
| Asn Leu Pro Ala Ser Leu Thr Glu Leu | His Ile Asn Asp Asn Met | |
| 665 | 670 | 675 |
| Leu Lys Phe Phe Asn Trp Thr Leu Leu | Gln Gln Phe Pro Arg Leu | |
| 680 | 685 | 690 |
| Glu Leu Leu Asp Leu Arg Gly Asn Lys | Leu Leu Phe Leu Thr Asp | |
| 695 | 700 | 705 |
| Ser Leu Ser Asp Phe Thr Ser Ser Leu | Arg Thr Leu Leu Leu Ser | |
| 710 | 715 | 720 |
| His Asn Arg Ile Ser His Leu Pro Ser | Gly Phe Leu Ser Glu Val | |
| 725 | 730 | 735 |
| Ser Ser Leu Lys His Leu Asp Leu Ser | Ser Asn Leu Leu Lys Thr | |
| 740 | 745 | 750 |
| Ile Asn Lys Ser Ala Leu Glu Thr Lys | Thr Thr Thr Lys Leu Ser | |
| 755 | 760 | 765 |
| Met Leu Glu Leu His Gly Asn Pro Phe | Glu Cys Thr Cys Asp Ile | |
| 770 | 775 | 780 |
| Gly Asp Phe Arg Arg Trp Met Asp Glu | His Leu Asn Val Lys Ile | |
| 785 | 790 | 795 |
| Pro Arg Leu Val Asp Val Ile Cys Ala | Ser Pro Gly Asp Gln Arg | |
| 800 | 805 | 810 |
| Gly Lys Ser Ile Val Ser Leu Glu Leu | Thr Thr Cys Val Ser Asp | |
| 815 | 820 | 825 |
| Val Thr Ala Val Ile Leu Phe Phe Phe | Thr Phe Phe Ile Thr Thr | |
| 830 | 835 | 840 |
| Met Val Met Leu Ala Ala Leu Ala His | His Leu Phe Tyr Trp Asp | |
| 845 | 850 | 855 |
| Val Trp Phe Ile Tyr Asn Val Cys Leu | Ala Lys Val Lys Gly Tyr | |
| 860 | 865 | 870 |
| Arg Ser Leu Ser Thr Ser Gln Thr Phe | Tyr Asp Ala Tyr Ile Ser | |
| 875 | 880 | 885 |
| Tyr Asp Thr Lys Asp Ala Ser Val Thr | Asp Trp Val Ile Asn Glu | |
| 890 | 895 | 900 |
| Leu Arg Tyr His Leu Glu Glu Ser Arg | Asp Lys Asn Val Leu Leu | |
| 905 | 910 | 915 |
| Cys Leu Glu Glu Arg Asp Trp Asp Pro | Gly Leu Ala Ile Ile Asp | |
| 920 | 925 | 930 |

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<210> 506

<211> 273

<212> PRT

<213> Homo sapiens

<400> 506

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu |
| 1 | | | | | 5 | | | | 10 | | | | | 15 |

Ala Val Gly Gly Thr Glu His Ala Tyr Arg Pro Gly Arg Arg Val
20 25 30

Cys Ala Val Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val
35 40 45

Gln Arg Val Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg
50 55 60

Ala Cys Ser Thr Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg
65 70 75

Ser Pro Gly Leu Ala Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro
80 85 90

Gly Trp Lys Arg Thr Ser Gly Leu Pro Gly Ala Cys Gly Ala Ala
95 100 105

Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro
110 115 120

Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln
125 130 135

Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln
140 145 150

Arg Cys Ile Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys Trp Glu
155 160 165

Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys Val Pro Lys Gly
170 175 180

Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala
185 190 195

Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp Leu Leu
200 205 210

Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu Ala
215 220 225

Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu
230 235 240

Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu
245 250 255

Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys
260 265 270

Lys Asp Ser

<210> 507
<211> 1700
<212> DNA
<213> Homo sapiens

<400> 507

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<210> 508

<211> 273

<212> PRT

<213> Homo sapiens

<400> 508

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Arg | Cys | Ile | Asn | Thr | Ala | Gly | Ser | Tyr | Trp | Cys | Gln | Cys | Trp | Glu |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gly | His | Ser | Leu | Ser | Ala | Asp | Gly | Thr | Leu | Cys | Val | Pro | Lys | Gly |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gly | Pro | Pro | Arg | Val | Ala | Pro | Asn | Pro | Thr | Gly | Val | Asp | Ser | Ala |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Met | Lys | Glu | Glu | Val | Gln | Arg | Leu | Gln | Ser | Arg | Val | Asp | Leu | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Glu | Lys | Leu | Gln | Leu | Val | Leu | Ala | Pro | Leu | His | Ser | Leu | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ser | Gln | Ala | Leu | Glu | His | Gly | Leu | Pro | Asp | Pro | Gly | Ser | Leu | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Val | His | Ser | Phe | Gln | Gln | Leu | Gly | Arg | Ile | Asp | Ser | Leu | Ser | Glu |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Gln | Ile | Ser | Phe | Leu | Glu | Glu | Gln | Leu | Gly | Ser | Cys | Ser | Cys | Lys |
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Lys Asp Ser

<210> 509
 <211> 1538
 <212> DNA
 <213> Homo sapiens

<400> 509
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 ctgaggcccc agcaagggct agggctccatc tccagtccca ggacacagca 150
 gcggccacca tggccacgcc tgggctccag cagcatcagc agccccagg 200
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 gccaccccg cctggaggcac aggccatgag gggctctcag gaggtgctgc 350
 tgatgtggct tctggtgttg gcagtgggcg gcacagagca cgcctaccgg 400
 cccggccgta ggggtgtgtgc tgtccgggct cacggggacc ctgtctccga 450
 gtcgttcgtg cagcgtgtgt accagccctt cctcaccacc tgcgacgggc 500
 accgggcctg cagcacctac cgaaccatct ataggaccgc ctaccgccgc 550
 agccctgggc tggcccctgc caggcctcgc tacgcgtgct gcccggctg 600
 gaagaggacc agcgggcttc ctggggcctg tggagcagca atatgccagc 650
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 ctgctgcctg acccccagca caataaaaat gaaacgtg 1538

<210> 510

<211> 273

<212> PRT

<213> Homo sapiens

<400> 510

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Arg | Gly | Ser | Gln | Glu | Val | Leu | Leu | Met | Trp | Leu | Leu | Val | Leu | 1 | 5 | 10 | 15 |
| Ala | Val | Gly | Gly | Thr | Glu | His | Ala | Tyr | Arg | Pro | Gly | Arg | Arg | Val | 20 | 25 | 30 | |
| Cys | Ala | Val | Arg | Ala | His | Gly | Asp | Pro | Val | Ser | Glu | Ser | Phe | Val | 35 | 40 | 45 | |
| Gln | Arg | Val | Tyr | Gln | Pro | Phe | Leu | Thr | Thr | Cys | Asp | Gly | His | Arg | 50 | 55 | 60 | |
| Ala | Cys | Ser | Thr | Tyr | Arg | Thr | Ile | Tyr | Arg | Thr | Ala | Tyr | Arg | Arg | 65 | 70 | 75 | |
| Ser | Pro | Gly | Leu | Ala | Pro | Ala | Arg | Pro | Arg | Tyr | Ala | Cys | Cys | Pro | 80 | 85 | 90 | |
| Gly | Trp | Lys | Arg | Thr | Ser | Gly | Leu | Pro | Gly | Ala | Cys | Gly | Ala | Ala | 95 | 100 | 105 | |
| Ile | Cys | Gln | Pro | Pro | Cys | Arg | Asn | Gly | Gly | Ser | Cys | Val | Gln | Pro | 110 | 115 | 120 | |
| Gly | Arg | Cys | Arg | Cys | Pro | Ala | Gly | Trp | Arg | Gly | Asp | Thr | Cys | Gln | 125 | 130 | 135 | |
| Ser | Asp | Val | Asp | Glu | Cys | Ser | Ala | Arg | Arg | Gly | Gly | Cys | Pro | Gln | | | | |

<400> 513

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<210> 514

<211> 2690

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 2039-2065

<223> unknown base

<400> 514

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agttgggtct ccgtgtttca ggccggctcc cccttcctgg tctcccttct 200
cccgtgggc cggtttatcg ggaggagatt gtcttccagg gctagcaatt 250
ggacttttga tgatgtttga ccagcggca ggaatagcag gcaacgtgat 300
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ggtgacacgg aaatgggaga aactcccagg caggaacacc ttttgctgtg 450
atggccgcgt catgatggcc cggcaaaagg gcattttcta cctgaccctt 500
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tccttttctc catggctaca ctgttgagga ccagcttcag tgaccctgga 650
gtgatttctc gggcgctacc agatgaagca gctttcatag aaatggagat 700
agaagctacc aatggtgctg tgccccaggg ccagcgacca ccgcctcgta 750
tcaagaattt ccagataaac aaccagattg tgaaactgaa atactgttac 800
acatgcaaga tcttccggcc tcccgggcc tccattgca gcatctgtga 850
caactgtgtg gagcgcttcg accatcactg ccctgggtg gggaattgtg 900
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 ccagggtcct gtctggatga cttatgcggt gggggagtgt aaaccggaac 2650
 ttttcatcta ttgaaggcg attaaactgt gtctaatagca 2690

<210> 515
 <211> 364
 <212> PRT
 <213> Homo sapiens

<400> 515
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 Met Ala Arg Gln Lys Gly Ile Phe Tyr Leu Thr Leu Phe Leu Ile
 35 40 45
 Leu Gly Thr Cys Thr Leu Phe Phe Ala Phe Glu Cys Arg Tyr Leu
 50 55 60
 Ala Val Gln Leu Ser Pro Ala Ile Pro Val Phe Ala Ala Met Leu
 65 70 75
 Phe Leu Phe Ser Met Ala Thr Leu Leu Arg Thr Ser Phe Ser Asp
 80 85 90
 Pro Gly Val Ile Pro Arg Ala Leu Pro Asp Glu Ala Ala Phe Ile
 95 100 105
 Glu Met Glu Ile Glu Ala Thr Asn Gly Ala Val Pro Gln Gly Gln
 110 115 120
 Arg Pro Pro Pro Arg Ile Lys Asn Phe Gln Ile Asn Asn Gln Ile
 125 130 135
 Val Lys Leu Lys Tyr Cys Tyr Thr Cys Lys Ile Phe Arg Pro Pro
 140 145 150
 Arg Ala Ser His Cys Ser Ile Cys Asp Asn Cys Val Glu Arg Phe
 155 160 165
 Asp His His Cys Pro Trp Val Gly Asn Cys Val Gly Lys Arg Asn
 170 175 180
 Tyr Arg Tyr Phe Tyr Leu Phe Ile Leu Ser Leu Ser Leu Leu Thr
 185 190 195
 Ile Tyr Val Phe Ala Phe Asn Ile Val Tyr Val Ala Leu Lys Ser
 200 205 210
 Leu Lys Ile Gly Phe Leu Glu Thr Leu Lys Glu Thr Pro Gly Thr
 215 220 225
 Val Leu Glu Val Leu Ile Cys Phe Phe Thr Leu Trp Ser Val Val

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Leu | Thr | Gly | Phe | His | Thr | Phe | Leu | Val | Ala | Leu | Asn | Gln | Thr |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Thr | Asn | Glu | Asp | Ile | Lys | Gly | Ser | Trp | Thr | Gly | Lys | Asn | Arg | Val |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Gln | Asn | Pro | Tyr | Ser | His | Gly | Asn | Ile | Val | Lys | Asn | Cys | Cys | Glu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Val | Leu | Cys | Gly | Pro | Leu | Pro | Pro | Ser | Val | Leu | Asp | Arg | Arg | Gly |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Ile | Leu | Pro | Leu | Glu | Glu | Ser | Gly | Ser | Arg | Pro | Pro | Ser | Thr | Gln |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Glu | Thr | Ser | Ser | Ser | Leu | Leu | Pro | Gln | Ser | Pro | Ala | Pro | Thr | Glu |
| | | | | 320 | | | | | 325 | | | | | 330 |
| His | Leu | Asn | Ser | Asn | Glu | Met | Pro | Glu | Asp | Ser | Ser | Thr | Pro | Glu |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Glu | Met | Pro | Pro | Pro | Glu | Pro | Pro | Glu | Pro | Pro | Gln | Glu | Ala | Ala |
| | | | | 350 | | | | | 355 | | | | | 360 |

Glu Ala Glu Lys

<210> 516
 <211> 255
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 36, 38, 88, 118, 135, 193, 213, 222
 <223> unknown base

<400> 516
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 tgaattaggt attataggga tgggtggggtt gatttttntt cctggaggct 100
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 cccctgggtg gggaattgtg ttggaaagag gaactaccgc tanttctacc 200
 tcttcatcct ttntctctcc cncctcacia tctatgtctt cgccttcaac 250
 atcgt 255

<210> 517
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>

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 gtggcgctgc gggcactttg gtagactgtg ccaccacggc gtgtgttgtg 1650
 aaacgtgaaa taaaaagagc aaaaaaaaaa 1679

<210> 523
 <211> 344
 <212> PRT
 <213> Homo sapiens

<400> 523

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Lys | Thr | Ile | Gln | Pro | Lys | Met | His | Asn | Ser | Ile | Ser | Trp | Ala | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Ile | Phe | Thr | Gly | Leu | Ala | Ala | Leu | Cys | Leu | Phe | Gln | Gly | Val | Pro | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Val | Arg | Ser | Gly | Asp | Ala | Thr | Phe | Pro | Lys | Ala | Met | Asp | Asn | Val | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Thr | Val | Arg | Gln | Gly | Glu | Ser | Ala | Thr | Leu | Arg | Cys | Thr | Ile | Asp | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Asn | Arg | Val | Thr | Arg | Val | Ala | Trp | Leu | Asn | Arg | Ser | Thr | Ile | Leu | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Tyr | Ala | Gly | Asn | Asp | Lys | Trp | Cys | Leu | Asp | Pro | Arg | Val | Val | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Leu | Ser | Asn | Thr | Gln | Thr | Gln | Tyr | Ser | Ile | Glu | Ile | Gln | Asn | Val | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Asp | Val | Tyr | Asp | Glu | Gly | Pro | Tyr | Thr | Cys | Ser | Val | Gln | Thr | Asp | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asn | His | Pro | Lys | Thr | Ser | Arg | Val | His | Leu | Ile | Val | Gln | Val | Ser | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Pro | Lys | Ile | Val | Glu | Ile | Ser | Ser | Asp | Ile | Ser | Ile | Asn | Glu | Gly | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Asn | Asn | Ile | Ser | Leu | Thr | Cys | Ile | Ala | Thr | Gly | Arg | Pro | Glu | Pro | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Thr | Val | Thr | Trp | Arg | His | Ile | Ser | Pro | Lys | Ala | Val | Gly | Phe | Val | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ser | Glu | Asp | Glu | Tyr | Leu | Glu | Ile | Gln | Gly | Ile | Thr | Arg | Glu | Gln | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Ser | Gly | Asp | Tyr | Glu | Cys | Ser | Ala | Ser | Asn | Asp | Val | Ala | Ala | Pro | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Val | Val | Arg | Arg | Val | Lys | Val | Thr | Val | Asn | Tyr | Pro | Pro | Tyr | Ile | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Ser | Glu | Ala | Lys | Gly | Thr | Gly | Val | Pro | Val | Gly | Gln | Lys | Gly | Thr | |

| | | | | | |
|-----------------|---------------------|-------------------------|-----|--|-----|
| | 230 | | 235 | | 240 |
| Leu Gln Cys Glu | Ala Ser Ala Val Pro | Ser Ala Glu Phe Gln Trp | | | |
| | 245 | 250 | 255 | | |
| Tyr Lys Asp Asp | Lys Arg Leu Ile Glu | Gly Lys Lys Gly Val Lys | | | |
| | 260 | 265 | 270 | | |
| Val Glu Asn Arg | Pro Phe Leu Ser Lys | Leu Ile Phe Phe Asn Val | | | |
| | 275 | 280 | 285 | | |
| Ser Glu His Asp | Tyr Gly Asn Tyr Thr | Cys Val Ala Ser Asn Lys | | | |
| | 290 | 295 | 300 | | |
| Leu Gly His Thr | Asn Ala Ser Ile Met | Leu Phe Gly Pro Gly Ala | | | |
| | 305 | 310 | 315 | | |
| Val Ser Glu Val | Ser Asn Gly Thr Ser | Arg Arg Ala Gly Cys Val | | | |
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| Trp Leu Leu Pro | Leu Leu Val Leu His | Leu Leu Leu Lys Phe | | | |
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| tgaacgtcgc | gctgcaggag | ctgggagctg | gcagcaacgt | gggattccag | 150 |
| aaggggacaa | gacagctgtt | aggctcacgc | acgcagctgg | agctgggtctt | 200 |
| agcaggtgcc | tctctactgc | tggtctgact | gcttctgggc | tgcccttgtgg | 250 |
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| gaggcctgca | ttcgagtggc | tggaaaaatc | ctggagtccc | tggaccgagg | 350 |
| ggtgagcccc | tgtgaggact | tttaccagtt | ctcctgtggg | ggctggattc | 400 |
| ggaggaaccc | cctgcccgat | gggcgttctc | gctggaacac | cttcaacagc | 450 |
| ctctgggacc | aaaaccaggc | catactgaag | cacctgcttg | aaaacaccac | 500 |
| cttcaactcc | agcagtgaag | ctgagcagaa | gacacagcgc | ttctacctat | 550 |
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| cggaaccaag | catcctgaac | aattacctga | tctggaacct | ggtgcaaaag | 1200 |
| acaacctcaa | gcctggaccg | acgctttgag | tctgcacaag | agaagctgct | 1250 |
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<211> 736

<212> PRT

<213> Homo sapiens

<400> 526

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| Phe | Gln | Lys | Gly | Thr | Arg | Gln | Leu | Leu | Gly | Ser | Arg | Thr | Gln | Leu |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | |
|-----------------|---------------------|---------------------|-----|
| Glu Pro Val Val | Val Tyr Gly Met Asp | Tyr Leu Gln Gln Val | Ser |
| 335 | | 340 | 345 |
| Glu Leu Ile Asn | Arg Thr Glu Pro Ser | Ile Leu Asn Asn Tyr | Leu |
| 350 | | 355 | 360 |
| Ile Trp Asn Leu | Val Gln Lys Thr Thr | Ser Ser Leu Asp Arg | Arg |
| 365 | | 370 | 375 |
| Phe Glu Ser Ala | Gln Glu Lys Leu Leu | Glu Thr Leu Tyr Gly | Thr |
| 380 | | 385 | 390 |
| Lys Lys Ser Cys | Val Pro Arg Trp Gln | Thr Cys Ile Ser Asn | Thr |
| 395 | | 400 | 405 |
| Asp Asp Ala Leu | Gly Phe Ala Leu Gly | Ser Leu Phe Val Lys | Ala |
| 410 | | 415 | 420 |
| Thr Phe Asp Arg | Gln Ser Lys Glu Ile | Ala Glu Gly Met Ile | Ser |
| 425 | | 430 | 435 |
| Glu Ile Arg Thr | Ala Phe Glu Glu Ala | Leu Gly Gln Leu Val | Trp |
| 440 | | 445 | 450 |
| Met Asp Glu Lys | Thr Arg Gln Ala Ala | Lys Glu Lys Ala Asp | Ala |
| 455 | | 460 | 465 |
| Ile Tyr Asp Met | Ile Gly Phe Pro Asp | Phe Ile Leu Glu Pro | Lys |
| 470 | | 475 | 480 |
| Glu Leu Asp Asp | Val Tyr Asp Gly Tyr | Glu Ile Ser Glu Asp | Ser |
| 485 | | 490 | 495 |
| Phe Phe Gln Asn | Met Leu Asn Leu Tyr | Asn Phe Ser Ala Lys | Val |
| 500 | | 505 | 510 |
| Met Ala Asp Gln | Leu Arg Lys Pro Pro | Ser Arg Asp Gln Trp | Ser |
| 515 | | 520 | 525 |
| Met Thr Pro Gln | Thr Val Asn Ala Tyr | Tyr Leu Pro Thr Lys | Asn |
| 530 | | 535 | 540 |
| Glu Ile Val Phe | Pro Ala Gly Ile Leu | Gln Ala Pro Phe Tyr | Ala |
| 545 | | 550 | 555 |
| Arg Asn His Pro | Lys Ala Leu Asn Phe | Gly Gly Ile Gly Val | Val |
| 560 | | 565 | 570 |
| Met Gly His Glu | Leu Thr His Ala Phe | Asp Asp Gln Gly Arg | Glu |
| 575 | | 580 | 585 |
| Tyr Asp Lys Glu | Gly Asn Leu Arg Pro | Trp Trp Gln Asn Glu | Ser |
| 590 | | 595 | 600 |
| Leu Ala Ala Phe | Arg Asn His Thr Ala | Cys Met Glu Glu Gln | Tyr |
| 605 | | 610 | 615 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
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| Leu | Gly | Glu | Asn | Ile | Thr | Asp | Asn | Gly | Gly | Leu | Lys | Ala | Ala | Tyr | |
| | | | | 635 | | | | | 640 | | | | | 645 | |
| Asn | Ala | Tyr | Lys | Ala | Trp | Leu | Arg | Lys | His | Gly | Glu | Glu | Gln | Gln | |
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| Leu | Pro | Ala | Val | Gly | Leu | Thr | Asn | His | Gln | Leu | Phe | Phe | Val | Gly | |
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| Phe | Ala | Gln | Val | Trp | Cys | Ser | Val | Arg | Thr | Pro | Glu | Ser | Ser | His | |
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| Glu | Gly | Leu | Val | Thr | Asp | Pro | His | Ser | Pro | Ala | Arg | Phe | Arg | Val | |
| | | | | 695 | | | | | 700 | | | | | 705 | |
| Leu | Gly | Thr | Leu | Ser | Asn | Ser | Arg | Asp | Phe | Leu | Arg | His | Phe | Gly | |
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| Cys | Pro | Val | Gly | Ser | Pro | Met | Asn | Pro | Gly | Gln | Leu | Cys | Glu | Val | |
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Trp

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 <211> 4308
 <212> DNA
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<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<210> 532
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ggtactggac ccctagggcc acaa 24

<210> 533
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<210> 537
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<210> 539
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<210> 540
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<220>
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<210> 541
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agatgtggat gaatgcagtg cta 23

<210> 549
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atcaacaccg ccggcagtta ctgg 24

<210> 550
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<400> 550
acagagtgtg ccgtctgcag aca 23

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agcctcctgg tgcactcct 19

<210> 552
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<223> Synthetic oligonucleotide probe

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gctgggcagt cacgagtctt 20

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<400> 554
aatcctccat ctcagatctt ccag 24

<210> 555
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<400> 555
cctcagcggc aacagccggc c 21

<210> 556
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<223> Synthetic oligonucleotide probe

<400> 556
tgggccaagg gctgc 15

<210> 557
<211> 22
<212> DNA
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<220>
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<400> 557

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tggtggataa ccaacaagat gg 22

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<211> 34

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<210> 559

<211> 24

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 559

caggtgctct tttcagtcac gttt 24

<210> 560

<211> 21

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<223> Synthetic oligonucleotide probe

<400> 560

tggccattct caggacaaga g 21

<210> 561

<211> 26

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<400> 562

tgccctggaat cacatgaca 19

<210> 563

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 <400> 563
 tgtggcacag acccaatcct 20

 <210> 564
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 <400> 564
 gaccctgaag gcctccggcc t 21

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 gagagaggga aggcagctat gtc 23

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 <400> 566
 cagcccctct ctttcacctg t 21

 <210> 567
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ttcaagttcc tgaagccgat tat 23

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<400> 570
ccaacttccc tccccagtg cct 23

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<400> 571
ttggggaagg tagaatttcc ttgtat 26

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<400> 572
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<400> 580
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<210> 581
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<220>
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<400> 581
gcaggaaacc ttcgaatctg ag 22

<210> 582
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<400> 582
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<210> 583
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<400> 583
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<210> 584
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<220>

<223> Synthetic oligonucleotide probe

<400> 584

gacggctgga tctgtgagaa a 21

<210> 585

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<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 585

cacaactgct gaccccgccc a 21

<210> 586

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 586

ccaggatacg acatgctgca 20

<210> 587

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 587

aaactccaac ctgtatcaga tgca 24

<210> 588

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 588

cccccaagcc cttagactct aagcc 25

<210> 589

<211> 19

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 589

gacccggcac cttgctaac 19

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<223> Synthetic oligonucleotide probe

<400> 590

ggacggtcag tcaggatgac a 21

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<223> Synthetic oligonucleotide probe

<400> 591

ttcgcatca tctotttccct ctccc 25

<210> 592

<211> 25

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<400> 592

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<210> 593

<211> 28

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<223> Synthetic oligonucleotide probe

<400> 593

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<210> 594

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<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 594

ttgcaactgg gaatatacca cgacatgaga 30

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<223> Synthetic oligonucleotide probe

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<210> 596

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<400> 596

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<210> 597

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 597

tccaacaacc attttcctct ggtcc 25

<210> 598

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 598

aagcagtagc cattaacaag tca 23

<210> 599

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<223> Synthetic oligonucleotide probe

<400> 599

caagcgtcca ggtttattga 20

<210> 600

<211> 20
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 gactacaagg cgctcagcta 20

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 <400> 602
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 <400> 603
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 <400> 604
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<400> 605
agatgtggat gaatgcagtg cta 23

<210> 606
<211> 24
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<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

<400> 606
atcaacaccg ccggcagtta ctgg 24

<210> 607
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<400> 607
acagagtgta ccgtctgcag aca 23

<210> 608
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<400> 608
agcctcctgg tgcactcct 19

<210> 609
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<212> DNA
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<400> 609
cgactccctg agcgagcaga tttcc 25

<210> 610
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 610
gctgggcagt cacgagtctt 20

<210> 611
<211> 2840
<212> DNA
<213> Homo Sapien

<400> 611
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aagcaaccga gaggagggga ggcaaaaaca ccgaaaaaca aaaagagaga 100
aacaacaccc aacaactggg gtggggggaa gaaagaaaga aaagaaaccc 150
acccaccac caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaatc 200
ctgtggcgcg ccgcctgggt cccgggaaga ctgccagca ccagggggtg 250
ggggagtgcg agctgaaagc tgctggagag tgagcagccc tagcagggat 300
ggacatgatg ctgttggtgc aggggtgctt ttgctcgaac cagtggcttg 350
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 aaagtgctga tggctggatc caatctggta cagtttgta aaagcagcgt 1450
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 tacacaagga ataatttctg atccaggatc gtccttccaa atggctgtat 2650
 ttataaagg ttttgagct gactgaagc atcttatttt atagtatatc 2700

aaccttttgt ttttaaattg acctgccaag gtagctgaag acctttttaga 2750
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 tgggacgttt gtcaaaaaaa aaaaaaaaaa aaaaaaaaaa 2840

<210> 612
 <211> 352
 <212> PRT
 <213> Homo Sapien

<400> 612
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 1 5 10 15
 Ala Ala Val Leu Leu Ser Leu Cys Cys Leu Leu Pro Ser Cys Leu
 20 25 30
 Pro Ala Gly Gln Ser Val Asp Phe Pro Trp Ala Ala Val Asp Asn
 35 40 45
 Met Met Val Arg Lys Gly Asp Thr Ala Val Leu Arg Cys Tyr Leu
 50 55 60
 Glu Asp Gly Ala Ser Lys Gly Ala Trp Leu Asn Arg Ser Ser Ile
 65 70 75
 Ile Phe Ala Gly Gly Asp Lys Trp Ser Val Asp Pro Arg Val Ser
 80 85 90
 Ile Ser Thr Leu Asn Lys Arg Asp Tyr Ser Leu Gln Ile Gln Asn
 95 100 105
 Val Asp Val Thr Asp Asp Gly Pro Tyr Thr Cys Ser Val Gln Thr
 110 115 120
 Gln His Thr Pro Arg Thr Met Gln Val His Leu Thr Val Gln Val
 125 130 135
 Pro Pro Lys Ile Tyr Asp Ile Ser Asn Asp Met Thr Val Asn Glu
 140 145 150
 Gly Thr Asn Val Thr Leu Thr Cys Leu Ala Thr Gly Lys Pro Glu
 155 160 165
 Pro Ser Ile Ser Trp Arg His Ile Ser Pro Ser Ala Lys Pro Phe
 170 175 180
 Glu Asn Gly Gln Tyr Leu Asp Ile Tyr Gly Ile Thr Arg Asp Gln
 185 190 195
 Ala Gly Glu Tyr Glu Cys Ser Ala Glu Asn Ala Val Ser Phe Pro
 200 205 210
 Asp Val Arg Lys Val Lys Val Val Val Asn Phe Ala Pro Thr Ile
 215 220 225
 Gln Glu Ile Lys Ser Gly Thr Val Thr Pro Gly Arg Ser Gly Leu

| | | | | | |
|-------------------------------------|-------------------------|-----|-----|--|-----|
| | 230 | | 235 | | 240 |
| Ile Arg Cys Glu Gly Ala Gly Val Pro | Pro Pro Ala Phe Glu Trp | | | | |
| 245 | 250 | 255 | | | |
| Tyr Lys Gly Glu Lys Lys Leu Phe Asn | Gly Gln Gln Gly Ile Ile | | | | |
| 260 | 265 | 270 | | | |
| Ile Gln Asn Phe Ser Thr Arg Ser Ile | Leu Thr Val Thr Asn Val | | | | |
| 275 | 280 | 285 | | | |
| Thr Gln Glu His Phe Gly Asn Tyr Thr | Cys Val Ala Ala Asn Lys | | | | |
| 290 | 295 | 300 | | | |
| Leu Gly Thr Thr Asn Ala Ser Leu Pro | Leu Asn Pro Pro Ser Thr | | | | |
| 305 | 310 | 315 | | | |
| Ala Gln Tyr Gly Ile Thr Gly Ser Ala | Asp Val Leu Phe Ser Cys | | | | |
| 320 | 325 | 330 | | | |
| Trp Tyr Leu Val Leu Thr Leu Ser Ser | Phe Thr Ser Ile Phe Tyr | | | | |
| 335 | 340 | 345 | | | |
| Leu Lys Asn Ala Ile Leu Gln | | | | | |
| 350 | | | | | |

<210> 613
 <211> 1797
 <212> DNA
 <213> Homo Sapien

<400> 613
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 cattttctgct ggctccagga ctttggccat ctataaagct tggcaatgag 100
 aaataagaaa attctcaagg aggacgagct cttgagttag acccaacaag 150
 ctgctttttca ccaaattgca atggagcctt tcgaaatcaa tgttccaaag 200
 cccaagagga gaaatggggg gaacttctcc ctagctgtgg tggatcatcta 250
 cctgatcctg ctcaccgctg gcgctgggct gctggtgggc caagttctga 300
 atctgcaggc gggctccgg gtcttgaga tgtatttctt caatgacact 350
 ctggcggctg aggacagccc gtccttctcc ttgctgcagt cagcacaccc 400
 tggagaacac ctggctcagg gtgcatcgag gctgcaagtc ctgcaggccc 450
 aactcacctg ggtccgctg agccatgagc acttgctgca gcgggtagac 500
 aacttcactc agaaccagg gatgttcaga atcaaaggta aacaaggcgc 550
 cccagggtctt caaggtcaca agggggccat gggcatgcct ggtgcccttg 600
 gcccgccggg accacctgct gagaaggag ccaagggggc tatgggacga 650

| | | | |
|-----------------|---------------------|-------------------------|-----|
| Gly Arg Ala Gly | Leu Pro Gly Ser Pro | Gly Ser Pro Gly Ala Thr | |
| | 335 | 340 | 345 |
| Gly Leu Lys Gly | Ser Lys Gly Asp Thr | Gly Leu Gln Gly Gln Gln | |
| | 350 | 355 | 360 |
| Gly Arg Lys Gly | Glu Ser Gly Val Pro | Gly Pro Ala Gly Val Lys | |
| | 365 | 370 | 375 |
| Gly Glu Gln Gly | Ser Pro Gly Leu Ala | Gly Pro Lys Gly Ala Pro | |
| | 380 | 385 | 390 |
| Gly Gln Ala Gly | Gln Lys Gly Asp Gln | Gly Val Lys Gly Ser Ser | |
| | 395 | 400 | 405 |
| Gly Glu Gln Gly | Val Lys Gly Glu Lys | Gly Glu Arg Gly Glu Asn | |
| | 410 | 415 | 420 |
| Ser Val Ser Val | Arg Ile Val Gly Ser | Ser Asn Arg Gly Arg Ala | |
| | 425 | 430 | 435 |
| Glu Val Tyr Tyr | Ser Gly Thr Trp Gly | Thr Ile Cys Asp Asp Glu | |
| | 440 | 445 | 450 |
| Trp Gln Asn Ser | Asp Ala Ile Val Phe | Cys Arg Met Leu Gly Tyr | |
| | 455 | 460 | 465 |
| Ser Lys Gly Arg | Ala Leu Tyr Lys Val | Gly Ala Gly Thr Gly Gln | |
| | 470 | 475 | 480 |
| Ile Trp Leu Asp | Asn Val Gln Cys Arg | Gly Thr Glu Ser Thr Leu | |
| | 485 | 490 | 495 |
| Trp Ser Cys Thr | Lys Asn Ser Trp Gly | His His Asp Cys Ser His | |
| | 500 | 505 | 510 |
| Glu Glu Asp Ala | Gly Val Glu Cys Ser | Val | |
| | 515 | 520 | |

<210> 615
 <211> 647
 <212> DNA
 <213> Homo Sapien

<400> 615
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 agcacctcct ctctttctcct tttgcccaaa ctcacccagt gagtgtgagc 100
 atttaagaag catcctctgc caagacccaaa aggaaagaag aaaaagggcc 150
 aaaagccaaa atgaaactga tgggtacttgt tttcaccatt gggctaactt 200
 tgctgctagg agttcaagcc atgcctgcaa atgcctctc ttgctacaga 250
 aagatactaa aagatcacia ctgtcacaac cttccggaag gagtagctga 300

cctgacacag attgatgtca atgtccagga tcatttctgg gatgggaagg 350
 gatgtgagat gatctgttac tgcaacttca gcgaattgct ctgctgcca 400
 aaagacgttt tctttggacc aaagatctct ttcgtgattc cttgcaacaa 450
 tcaatgagaa tcttcatgta ttctggagaa caccattcct gatttccac 500
 aaactgcact acatcagtat aactgcattt ctagtttcta tatagtcaa 550
 tagagcatag attctataaa ttcttacttg tctaagacaa gtaaattctgt 600
 gttaaacaag tagtaataaa agttaattca atctaaaaaa aaaaaa 647

<210> 616
 <211> 98
 <212> PRT
 <213> Homo Sapien

<400> 616
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 20 25 30
 Lys Ile Leu Lys Asp His Asn Cys His Asn Leu Pro Glu Gly Val
 35 40 45
 Ala Asp Leu Thr Gln Ile Asp Val Asn Val Gln Asp His Phe Trp
 50 55 60
 Asp Gly Lys Gly Cys Glu Met Ile Cys Tyr Cys Asn Phe Ser Glu
 65 70 75
 Leu Leu Cys Cys Pro Lys Asp Val Phe Phe Gly Pro Lys Ile Ser
 80 85 90
 Phe Val Ile Pro Cys Asn Asn Gln
 95

<210> 617
 <211> 2558
 <212> DNA
 <213> Homo Sapien

<400> 617
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 cagcctgcag ggctgataag cgaggcatta gtgagattga gagagacttt 100
 accccgccgt ggtggttggg gggcgcgag tagagcagca gcacaggcgc 150
 ggggtccggg aggcggctc tgctcgcc gagatgtgga atctccttca 200
 cgaaaccgac tcggctgtgg ccaccgcgc cgcggcgcg tggctgtgcg 250
 ctggggcgct ggtgctggcg ggtggcttct ttctcctcgg ctctctcttc 300

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Ala | Lys | Gln | Ile | Gln | Ser | Gln | Trp | Lys | Glu | Phe | Gly | Leu | 95 | 100 | 105 |
| Asp | Ser | Val | Glu | Leu | Ala | His | Tyr | Asp | Val | Leu | Leu | Ser | Tyr | Pro | 110 | 115 | 120 |
| Asn | Lys | Thr | His | Pro | Asn | Tyr | Ile | Ser | Ile | Ile | Asn | Glu | Asp | Gly | 125 | 130 | 135 |
| Asn | Glu | Ile | Phe | Asn | Thr | Ser | Leu | Phe | Glu | Pro | Pro | Pro | Pro | Gly | 140 | 145 | 150 |
| Tyr | Glu | Asn | Val | Ser | Asp | Ile | Val | Pro | Pro | Phe | Ser | Ala | Phe | Ser | 155 | 160 | 165 |
| Pro | Gln | Gly | Met | Pro | Glu | Gly | Asp | Leu | Val | Tyr | Val | Asn | Tyr | Ala | 170 | 175 | 180 |
| Arg | Thr | Glu | Asp | Phe | Phe | Lys | Leu | Glu | Arg | Asp | Met | Lys | Ile | Asn | 185 | 190 | 195 |
| Cys | Ser | Gly | Lys | Ile | Val | Ile | Ala | Arg | Tyr | Gly | Lys | Val | Phe | Arg | 200 | 205 | 210 |
| Gly | Asn | Lys | Val | Lys | Asn | Ala | Gln | Leu | Ala | Gly | Ala | Lys | Gly | Val | 215 | 220 | 225 |
| Ile | Leu | Tyr | Ser | Asp | Pro | Ala | Asp | Tyr | Phe | Ala | Pro | Gly | Val | Lys | 230 | 235 | 240 |
| Ser | Tyr | Pro | Asp | Gly | Trp | Asn | Leu | Pro | Gly | Gly | Gly | Val | Gln | Arg | 245 | 250 | 255 |
| Gly | Asn | Ile | Leu | Asn | Leu | Asn | Gly | Ala | Gly | Asp | Pro | Leu | Thr | Pro | 260 | 265 | 270 |
| Gly | Tyr | Pro | Ala | Asn | Glu | Tyr | Ala | Tyr | Arg | Arg | Gly | Ile | Ala | Glu | 275 | 280 | 285 |
| Ala | Val | Gly | Leu | Pro | Ser | Ile | Pro | Val | His | Pro | Ile | Gly | Tyr | Tyr | 290 | 295 | 300 |
| Asp | Ala | Gln | Lys | Leu | Leu | Glu | Lys | Met | Gly | Gly | Ser | Ala | Pro | Pro | 305 | 310 | 315 |
| Asp | Ser | Ser | Trp | Arg | Gly | Ser | Leu | Lys | Val | Pro | Tyr | Asn | Val | Gly | 320 | 325 | 330 |
| Pro | Gly | Phe | Thr | Gly | Asn | Phe | Ser | Thr | Gln | Lys | Val | Lys | Met | His | 335 | 340 | 345 |
| Ile | His | Ser | Thr | Asn | Glu | Val | Thr | Arg | Ile | Tyr | Asn | Val | Ile | Gly | 350 | 355 | 360 |
| Thr | Leu | Arg | Gly | Ala | Val | Glu | Pro | Asp | Arg | Tyr | Val | Ile | Leu | Gly | 365 | 370 | 375 |
| Gly | His | Arg | Asp | Ser | Trp | Val | Phe | Gly | Gly | Ile | Asp | Pro | Gln | Ser | | | |

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 380 | | 385 | | 390 |
| Gly Ala Ala Val | Val His Glu Ile Val | Arg Ser Phe Gly Thr | Leu | | |
| | 395 | 400 | 405 | | |
| Lys Lys Glu Gly | Trp Arg Pro Arg Arg | Thr Ile Leu Phe Ala | Ser | | |
| | 410 | 415 | 420 | | |
| Trp Asp Ala Glu | Glu Phe Gly Leu Leu | Gly Ser Thr Glu Trp | Ala | | |
| | 425 | 430 | 435 | | |
| Glu Glu Asn Ser | Arg Leu Leu Gln Glu | Arg Gly Val Ala Tyr | Ile | | |
| | 440 | 445 | 450 | | |
| Asn Ala Asp Ser | Ser Ile Glu Gly Asn | Tyr Thr Leu Arg Val | Asp | | |
| | 455 | 460 | 465 | | |
| Cys Thr Pro Leu | Met Tyr Ser Leu Val | His Asn Leu Thr Lys | Glu | | |
| | 470 | 475 | 480 | | |
| Leu Lys Ser Pro | Asp Glu Gly Phe Glu | Gly Lys Ser Leu Tyr | Glu | | |
| | 485 | 490 | 495 | | |
| Ser Trp Thr Lys | Lys Ser Pro Ser Pro | Glu Phe Ser Gly Met | Pro | | |
| | 500 | 505 | 510 | | |
| Arg Ile Ser Lys | Leu Gly Ser Gly Asn | Asp Phe Glu Val Phe | Phe | | |
| | 515 | 520 | 525 | | |
| Gln Arg Leu Gly | Ile Ala Ser Gly Arg | Ala Arg Tyr Thr Lys | Asn | | |
| | 530 | 535 | 540 | | |
| Trp Glu Thr Asn | Lys Phe Ser Gly Tyr | Pro Leu Tyr His Ser | Val | | |
| | 545 | 550 | 555 | | |
| Tyr Glu Thr Tyr | Glu Leu Val Glu Lys | Phe Tyr Asp Pro Met | Phe | | |
| | 560 | 565 | 570 | | |
| Lys Tyr His Leu | Thr Val Ala Gln Val | Arg Gly Gly Met Val | Phe | | |
| | 575 | 580 | 585 | | |
| Glu Leu Ala Asn | Ser Ile Val Leu Pro | Phe Asp Cys Arg Asp | Tyr | | |
| | 590 | 595 | 600 | | |
| Ala Val Val Leu | Arg Lys Tyr Ala Asp | Lys Ile Tyr Ser Ile | Ser | | |
| | 605 | 610 | 615 | | |
| Met Lys His Pro | Gln Glu Met Lys Thr | Tyr Ser Val Ser Phe | Asp | | |
| | 620 | 625 | 630 | | |
| Ser Leu Phe Ser | Ala Val Lys Asn Phe | Thr Glu Ile Ala Ser | Lys | | |
| | 635 | 640 | 645 | | |
| Phe Ser Glu Arg | Leu Gln Asp Phe Asp | Lys Ser Asn Pro Ile | Val | | |
| | 650 | 655 | 660 | | |
| Leu Arg Met Met | Asn Asp Gln Leu Met | Phe Leu Glu Arg Ala | Phe | | |
| | 665 | 670 | 675 | | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Asp | Pro | Leu | Gly | Leu | Pro | Asp | Arg | Pro | Phe | Tyr | Arg | His | Val |
| | | | | 680 | | | | | 685 | | | | | 690 |
| | | | | | | | | | | | | | | |
| Ile | Tyr | Ala | Pro | Ser | Ser | His | Asn | Lys | Tyr | Ala | Gly | Glu | Ser | Phe |
| | | | | 695 | | | | | 700 | | | | | 705 |
| | | | | | | | | | | | | | | |
| Pro | Gly | Ile | Tyr | Asp | Ala | Leu | Phe | Asp | Ile | Glu | Ser | Lys | Val | Asp |
| | | | | 710 | | | | | 715 | | | | | 720 |
| | | | | | | | | | | | | | | |
| Pro | Ser | Lys | Ala | Trp | Gly | Glu | Val | Lys | Arg | Gln | Ile | Tyr | Val | Ala |
| | | | | 725 | | | | | 730 | | | | | 735 |
| | | | | | | | | | | | | | | |
| Ala | Phe | Thr | Val | Gln | Ala | Ala | Ala | Glu | Thr | Leu | Ser | Glu | Val | Ala |
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